

SOAP

and

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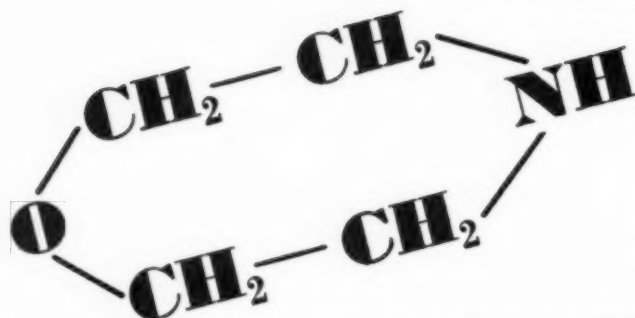
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REACTION of the consumer to the numerous new small-package soap substitutes which have come on the market during the past few months has not been altogether favorable. The reasons for this are quite apparent. Many of the new products, in fact a majority of them, are hurry-up, catch-penny materials put out at this time because the average housewife is unable to buy enough soap chips, granules or powders for her needs. Others are good products which are sound in formula and which have been awaiting the post-war market. That their manufacturers should take advantage of the present soap shortage to launch them is quite natural. But for the consumer to differentiate between the sheep and the goats is difficult and is probably a matter of chance.

Had many of these new detergents come to market under normal competitive conditions, there is doubt they could ever have reached first base. But the soap shortage changes the entire picture and gives them an opportunity which ordinarily would not exist. When soap supplies on retail shelves again become ample, the toll of new detergents is likely to be great. But in the meantime, they are injuring the market for all non-soap detergents, especially those products of merit designed for the long-pull. But shortages always bring shoddy substitute merchandise which could never stand up in competition,—and the present soap situation is no exception.

CONSUMPTION of oils and fats in soap manufacture for the first quarter of 1946 reflects the tight raw material situation in which soapers have found themselves since early last year. Fats used in 1946 were about twenty-five per cent less

than those used in 1945 for the corresponding period. Not only does this indicate how difficult it has been to acquire oils and fats, but it also tells in a nutshell why many dealer shelves throughout the country have been bare of soap stocks for long periods. The shortage of fats has more or less eclipsed quota limitations. Where the annual rate of consumption thus far this year has been at about 1,500,000,000 pounds of fats, the figure for 1945 was over 2,000,000,000 pounds. The rate for the second quarter of 1946 has probably been no greater than for the first quarter. And the figures tell the whole story,—no fats, no soap!

THE rate at which copra exports from the Philippines have increased since the beginning of 1946 is significant. It has proved that in spite of the numerous obstacles, copra could be gathered and shipped in really large quantities when the pressure is applied. The work of the Copra Export Management Company,—whose activities terminated on July first with the return of copra to free trading,—is to be commended. Before the year is out, these growing shipments may go a long way toward easing the present oil and fat shortage. The benefits which American soap kettles will derive from the larger shipments will depend to some degree on how much of the supply of coconut oil is taken for food use by UNRRA. The potential effect on glycerine production also tends to brighten that picture in spite of its present sombre hue.

According to CEMCO figures,—Copra Export Management Company was the copra procurement agency for Commodity Credit Corporation prior to July first,—close

to 32,000 long tons of copra were shipped from the Philippines in May, 1946. Of this, about 7,000 tons went for food uses to Europe, the balance coming to the United States. This 32,000 ton figure compares with 8,000 tons in January, 11,000 tons in February, 13,000 tons in March and 24,000 tons in April. Although the June figures are not yet available, hope for a 40,000 ton month was high. A 1946 program of 300,000 tons from the Philippines appeared very ambitious last January, but if the present trend continues, this figure might well be exceeded.

SOAP requirements of UNRRA for the second half of 1946 have been estimated at 45,000 tons. Of this total, UNRRA is undertaking to purchase 25,000 tons outside of the United States and to substitute as much synthetic detergent as possible for the balance of its needs. If the latter works out satisfactorily under conditions of foreign use as judged on the basis of a trial shipment now under order, the full 20,000 tons balance of needed soap will be replaced by synthetic detergent compositions. This will mean that the soap requirements of UNRRA for the balance of this year will not add the pressure of further demand on the already short American soap supplies. In view of the fact that it had been anticipated that UNRRA needs would be deducted from our domestic soap output, this is welcome news.

RESULTS of studies aimed to determine how much soap is wasted each year in the United States because of hard water have been published from time to time. The money loss in the form of soap which floats on wash water as lime and magnesium soap scums has been calculated and recalculated time without number. And the loss has been interpreted in terms of strain on the consumer's pocket-book. This latter we have always looked upon as so much hog wash as it has never represented the real problem of soap use

in hard water except perhaps in some industrial operations.

The most serious problem in hard water is the matter of soap performance, reduced detergency and the precipitation of lime soap curds plus occluded soil in the fibres of washed goods. The soap industry has been conscious of this problem for many years and has taken numerous steps to solve it, at least in part. It is the basic weakness of ordinary soap, the one point at which non-soap detergent compositions may eventually enter in a large way to take over an appreciable portion of the soap market. Hard water cost to the housewives of America is peanuts compared to its potential cost to the average soaper.

BARBER-SHOP shaving soap should be perfumed too! On several occasions recently, we have noted a conspicuous absence of perfume in the soap lather which comes from these automatic electric lathering machines now used so widely in the larger and better barber shops. So completely gone is the perfume by the time the soap reaches the face of the customer that one can almost smell the tittle of the tallow in the soap. We do not enjoy,—and we imagine that there are many like us,—a tallowy, fat-like aroma immediately adjacent to our nose while submitting to Tony's shave de luxe. And in spite of the reputed aversion of so-called he-men to flowery fragrances on or near their persons,—which experience tabs as bunk,—we feel that such is preferred to the emanations of a soap kettle, even by real tough guys.

Because these machines dispense the lather hot, the possibility exists that much or all of the perfume originally present in the soap is lost in the lathering process. We suggest then that the perfume content of the soap be doubled or tripled and maybe enough will remain when it reaches the customer's face to cover partially the unpleasant fatty odor. At least, it might be worth trying. After all, the original purpose of adding essential oils to soap was to cover the scent of the soap stock.

The GLYCERINE OUTLOOK...

By Leo Pasternak

THE current rate of glycerine consumption in the United States is estimated to be about 25 per cent above the figures for 1941. If glycerine consumption continues throughout the year at the present rate, the total on an absolute basis for 1946 should come close to 220,000,000 pounds. For 1941, this figure was 175,000,000 pounds. And current wider uses for glycerine are in great proportion of a "permanent" nature which indicate that a generally higher "normal" glycerine consumption may be anticipated in the years to come.

The present shortage of glycerine stocks in the United States is in no way due to a reduction in output, but is wholly a result of the wide expansion in demand. During 1945, 172,000,000 pounds of glycerine were produced in the United States. The production this year will in all probability equal or exceed this figure. But there is still a gap of over 40,000,000 pounds which must be made up from imports or elsewhere. There is also an interesting notation in the fact that although glycerine production is large, some of the largest producers and refiners are themselves using a greater proportion of their output in their own products. Thus, less glycerine from these sources is reaching the open market. The general indications are that the situation will remain tight throughout the balance of the year.

Imports from many foreign countries have come in to make up the shortage in the North American market. Chief sources have been the Argentine, India, Uruguay, Egypt, the West Indies and some from Europe. But it has been only at high prices that these supplies of foreign glycerine have been made available to the American market as import costs extend several times over the ceiling figure. With American producers unable to supply

the demand, consumers have turned to imported stocks as the only other source. The price for imported glycerine has risen steadily during the past several months as stocks in foreign markets dwindled as the result of the continued active demand from American buyers. Although the price of imported glycerine was much higher than the former OPA ceiling even before the expiration of the OPA, these purchases were permitted by OPA provided the price of the finished material into which the glycerine went did not advance. Since the termination of OPA controls, the market has been very unsettled, with second hands asking sharply higher prices than were formerly permitted by OPA.

As mentioned, the outlook for the balance of 1946 is for a continuation of the present situation in glycerine. If demand holds at current unprecedented levels, first indications are that a larger portion of supplies must come from abroad. The United States has always been a glycerine importer even under normal conditions, and today is apparently more dependent on foreign supplies than ever. But two factors might intervene to bring supply and demand into closer balance. One is a drop in demand which at this time appears unlikely, and the other is the possible effects of the importation of 300,000 tons of copra during 1946 from the Philippines according to the original program of the Copra Export

Lieut. Col. Leo Pasternak spent four years in the Army Ordnance Department as Chief of Procurement and Production of Ammunition Metal Components, leaving the service late in 1945. He is the head of L. Pasternak Co., New York, glycerine brokers, and has been a leading independent American glycerine authority for more than thirty years.—The Editors.

Commodity Corporation. The latter organization was disbanded as of July 1 and copra returned to free trading. Shipments will continue but independent of Government supervision except where UNRRA supplies are concerned.

Philippine copra in the amount of 300,000 tons might help greatly in easing the shortage of available glycerine, but there are several "ifs" involved. From this quantity of copra, if all of it comes to the United States, if all of it goes to the soap kettle, and if all of its glycerine is recovered, close to 40,000,000 pounds of glycerine figured on an absolute basis might be produced. This is about equal to the amount now being imported from various parts of the world. Figured as 400,000,000 pounds of coconut oil, a ten per cent estimate gives 40,000,000 pounds of glycerine. But,—and at this time of acute world-wide shortage of edible fats, this is significant,—a considerable part of this tonnage will undoubtedly be taken by UNRRA for food use. How much? Nobody knows right now. Of the May exports of copra from the Philippines, over twenty per cent went to Holland and Denmark for food purposes. So it is a matter of speculation, first, whether the Philippine shipments will reach the government estimate, and if so, what part of this will be convertible into soap and glycerine.

REVIEWING some of the happenings in the glycerine market both during and immediately after the end of the war reveals much important background on the present situation. In the summer of 1941, almost two years of war had gone by. Much American glycerine had been exported, but there seemed no reason for producers or consumers to be concerned about the outlook. Just one hint of approaching trouble was noted, a report from the Argentine that the Japs were buy-

ing everything in that market regardless of price. About July 1, 1941, glycerine suddenly tightened and producers found themselves unable to fill the demand. Prices began to advance to the highest point in five years. Then the OPM (Office of Production Management, later the War Production Board) decided something had to be done.

The plan of OPM, in conjunction with the British, who required large quantities, was to induce the Argentine producers to divert their glycerine to this country. This was a difficult plan to execute, considering that American prices were approximately one-half those being paid by Japan. However, the writer, with the blessing of the OPM, undertook to go to the Argentine in an attempt to accomplish the plan. Once there, further difficulty was encountered when the largest producer was placed on the British black list. After many weeks of negotiation, always with the cooperation of the U. S. Embassy and the Washington authorities, we finally succeeded in having this producer removed from the black list. As a result, this producer stopped selling the Japs and diverted his material to the United States at prevailing American prices, as did the smaller producers who feared British black list action.

With glycerine getting scarcer and scarcer, and prices continuing to advance, it was apparent that the situation was getting out of hand. Many complaints were made to the then recently created OPA, who, after several weeks of study, instituted the first government control of glycerine when they issued a specific ceiling on glycerine effective November 10, 1941. This nullified to some extent the work that had previously been done in Argentina as buying there had been on an advancing scale and the later purchases were made at prices exceeding the announced ceilings.

With the U. S. actually at war, the OPM placed glycerine on allocation and all interested parties were so notified on December 8, 1941. This action was taken because of the short supply and the apparent need of glycerine for war purposes.

Estimated

1946 GLYCERINE CONSUMPTION

THE figures given below were not compiled by the author but were determined by adding approximately 25 per cent to the consumption figures for 1941. Probably the estimate for resins is low in view of the wide increase in output of these materials this year, and figures for some other classifications are likely to be high.—The Editors.

	Pounds
Synthetic resins and ester gum.....	51,000,000
Dynamite and nitroglycerine.....	38,000,000
Tobacco.....	33,000,000
Cellulose films and meat casings.....	23,000,000
Dentifrices and toilet articles.....	14,000,000
Drugs and pharmaceuticals.....	13,700,000
Gaskets and cork products.....	10,200,000
Printers' rollers and supplies.....	6,700,000
Margarine, shortening, other edibles.....	5,300,000
Adhesives.....	3,600,000
Textile Processing.....	3,500,000
Beverages, flavors, candy, etc.....	3,100,000
Glassine, greaseproof, vegetable parchment.....	2,600,000
Rubber Processing.....	2,300,000
Cleaning materials.....	1,900,000
Paper, other than glassine or greaseproof.....	1,800,000
Manufacture of chemicals.....	1,700,000
All other uses.....	4,600,000
	220,000,000

Early in 1942 the WPB Glycerine Section, which was under the direction of members of the industry, undertook to bolster, from domestic sources, the stocks of glycerine in the hands of the government. They proceeded to create a substantial stock pile of refined and to purchase for government account, stocks on hand and future production. In addition, a representative was dispatched to the Argentine to procure crude and dynamite for the same purpose. This mission was successful and before long material began to arrive.

Prior to September 1942, all Lend-Lease glycerine was purchased by the Treasury, but then the army was designated as the procurement agency. The first large army purchase was made under the protocol with the Russians in 1942-43 and provided for very substantial amounts of dynamite and C. P. to go to Russia. In partial fulfillment of this requirement, the army took over the domestic contracts which the

CCC had for stock pile, and, with some additional purchases, completed the Russian protocol.

By the time the 1943-44 protocol (for shipment during 1944) with the Russians was negotiated,—less material than for the first year,—the American glycerine situation was much easier. The British, who had previously obtained large quantities on Lend-Lease, requested permission from this country to return several thousand tons. As the return of so large a quantity would have had a serious effect on an already easy situation, the army arranged, in spite of Russia's reluctance, to ship the 1943-44 protocol from England directly to Russia.

As predicted early in the war, glycerine was not being used for military explosives to any extent and the usage by the U. S. Army was negligible compared to what had been expected. In spite of release from allocation by the WPB with army concurrence, stocks continued to accumulate all over the

country. The stock pile held by the CCC was partially absorbed by the army and the balance was taken by private industry. The undertone of the market was indeed bearish when the 1944-45 protocol provided for several thousand tons to go to Russia. Prices had been reduced considerably and many producers and refiners were actually soliciting business. As a result, the army purchased its requirements to good advantage.

During the first year of the war, Lend-Lease procurement accounted for practically all heavy government buying and relatively small amounts were taken by our government for its own use. However, late in 1944 and early 1945, a double base powder requiring substantial quantities of glycerine was ready for production. The government planned its production to reach peak in early Fall, 1945, and at the top limit would have required three and one half to four million pounds of glycerine monthly. Because all indications pointed to a tight position, the government, in order to insure an adequate supply for its powder program, instituted a limitation of inventories to thirty days and on June 4, 1945, the price advanced two cents per pound. It is interesting to note that government usage for powder purposes did not exceed two million pounds per month.

With the advent of V-J Day, all Lend-Lease procurement, of course, ended, and the government program for double base powder was curtailed. Some production continued for several months, but the government had ample stocks to carry on without entering the market.

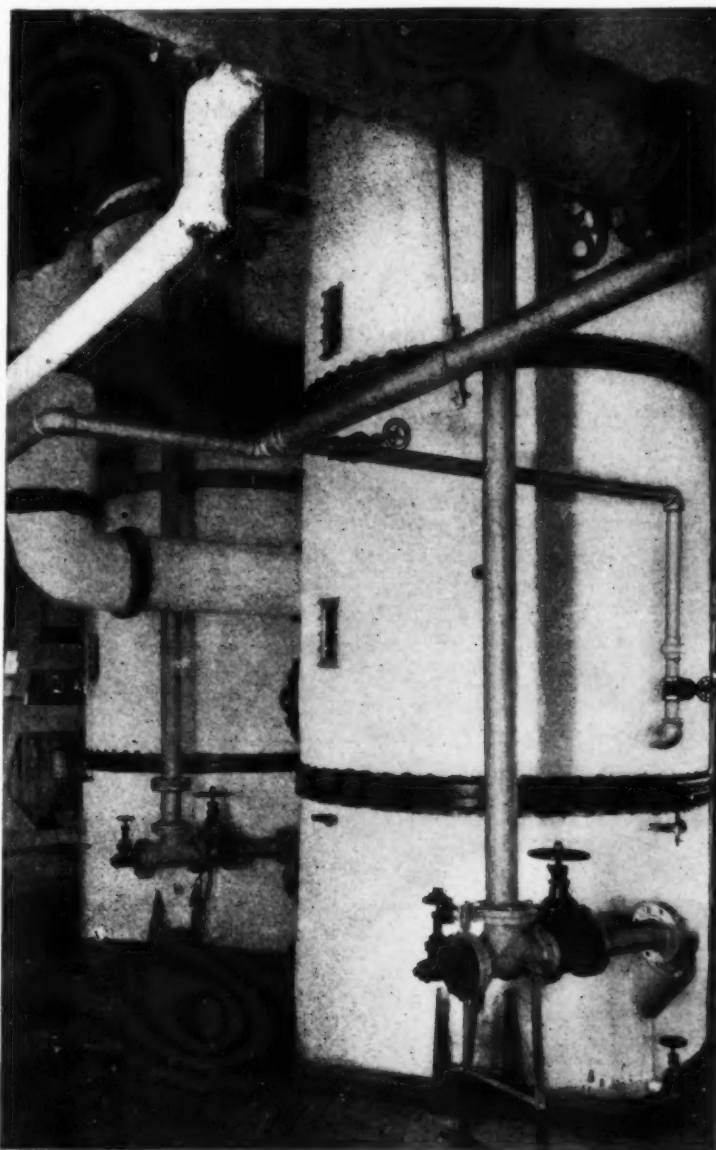
Immediately following V-J Day, with all government restrictions removed (except OPA), and with no further need for war purposes, the general feeling seemed to be that glycerine could and would revert to its normal position. For a few weeks this was the situation, but then materials, such as phthalic anhydride, were released from control, and the protective coating industry could once again manufacture alkyd resins. This reversed the entire picture and glycerine became shorter

than at any time during the war. This condition has now lasted close to a year, and there seems to be every likelihood of its continuing for an indefinite period.

Soap Export Plans

Government export plans for both soap and fats and oils for the remainder of 1946 and 1947 were outlined in a recent hearing before the Senate Special Committee to Study and Survey Problems of Small Business Enterprises in the U. S. by Kenneth Mainland, chief, of the edible oils division, Production and Marketing

Administration, Department of Agriculture. He pointed out that the government has firmly committed itself to export 375,000 long tons of fats and oils during the calendar year 1946, of which 64,600,000 pounds will be in the form of soap. The total includes relief and commercial exports. Total exports of 28,700,000 lbs. in the 2nd half of 1946 break down into 14,500,000 pounds of fats and oils in soaps to be shipped in the third quarter and 14,200,000 pounds in the fourth quarter. Another point made by Mr. Mainland was that no part of the planned procurement can be diverted to domestic use.



SURVEY

of a typical soap market



INCREASED consumer interest in synthetic detergents and water softeners was a significant sign of the current nationwide soap shortage highlighted in the latest 1946 edition of the annual consumer analysis of soap buying habits conducted by the *Milwaukee Journal*. Another revealing note was the appearance on the market of a number of new brands in the soap and detergent field this year, reversing the former trend. In spite of the current acute soap shortage, however, consumer buying is still reported at a high level in the Milwaukee market, and the old accepted brands seem to be holding their positions in spite of the gains registered by relative newcomers to the market.

Other interesting points brought out in the survey have to do with consumer plans for the purchase of mechanical washing aids. Only about one out of twelve Milwaukee housewives plan to buy electric dishwashing machines, it was reported, and the balance will continue washing dishes as in the past. Of those surveyed 90 per cent owned electric washing machines.

The yearly consumer analysis compiled by the *Milwaukee Journal* is a study of buying habits, brand preferences, and dealer distribution prevailing in the greater Milwaukee market. Questionnaires are mailed to families selected at random from the city and suburban registers, and estimates are based on reports from over 7,000 families in the Milwaukee area. The *Journal* presents each housewife in return for her questionnaire a large shopping bag filled with full size and sample packages of well known household products!

Replies are tabulated on the basis of four economic levels arrived at by obtaining data on rents paid or rental value of homes owned. The groups are: "\$50 rent and over," "\$40 to \$50 rent," "\$30 to \$40 rent," and "under \$30 rent." The consumer analysis is supplemented with a record of the distribution of individual brands among 300 independent grocers, additional chain grocery stores, as well as 100 drug stores, chain drug and department stores.

Toilet Soaps

"Lux" has slightly increased its favor among Milwaukee housewives as the leading toilet soap this year. It is currently preferred by 27 per cent of the Milwaukee housewives. In second place, "Sweetheart" has dropped back slightly to a preference figure of 16 per cent. "Ivory" holds steady at 15 per cent while "Palmolive" at 14 and "Camay" at 12 per cent have slightly increased the number of their users.

Bath Soaps

In Milwaukee, "Lifebuoy" is still the favored bath soap, attracting 22 per cent of the buyers as compared to 10 per cent who prefer "Ivory," 18 per cent, "Lux," 13 per cent "Sweetheart," and 11 per cent "Palmolive."

Household Laundry Soaps

The 1946 leader in household laundry soap sales in the Milwaukee area is "Oxydol" with an 18 per cent popularity rating as compared with "Fels Naptha" bar soap at 17 per cent. "Rinso" with 15 per cent has moved ahead of "Duz" which has remained with about the same rating of 14 per cent. The "John Hanser" product, in fifth place with 12 per cent, is the only other well-accepted product of this

type in the area. In 1945, there were only 69 brands of laundry soap in the Milwaukee area. In 1946, the number increased to 95, even surpassing the number of 89 brands offered in 1944. Apparently there are a number of newcomers in the laundry soap field who are attempting to establish themselves in this market while the old line companies are still held back by quota limitations and fat shortages.

Soap for Dishes

In first place, "Ivory" bar soap at 17 per cent continues its downward trend in popularity from a rating of 19 per cent in 1945 and 23 per cent in 1944. "Ivory" flakes is second with 13 per cent. "Duz" is third with 11 per cent, and "Chiffon" flakes has moved up with "Rinso" at 7 per cent, while "Oxydol" has dropped back to sixth place where it is preferred by 6 per cent of Milwaukee buyers. "Dreft" has made a significant gain in popularity as a dish-washing product, moving up from use by less than 1 per cent of all Milwaukee housewives last year to a figure of 5.5 this year. The number of brands selling in the Milwaukee area, 103, is about the same as last year.

Water Softeners

Water softeners and soap crystals continue to grow in popularity in the Milwaukee area. The percentage of buyers is now up to 56 as compared with 47 per cent in 1945 and 37 per cent in 1943. The number of brands still continues to diminish, 44 in 1946 as compared with 57 in 1945. "Climalene," preferred by 48 per cent of Milwaukee housewives, continues as the leading brand with no close competition, although it has dropped somewhat from its 53 per cent figure of 1945. Its

nearest competitor "No-Trik," at 8 per cent, has moved up very rapidly from less than 1 per cent in 1945. "No-Name" has moved into third place with 8 per cent while "Master Craft" and "Rex" at 6.5 have replaced "Lite" and "Melo," last year's third and fourth place sellers respectively.

Fine Fabric Soaps

"Lux" flakes, used by 42 per cent of the consumers in the Milwaukee area continues with twice the acceptance of its nearest competitor, "Ivory" flakes, which is the preferred product of 22 per cent of the buyers. "Dreft" at 9 has replaced "Duz" in third place while "Chiffon" flakes just under 9 per cent has moved into fourth place ahead of "Ivory Snow" which has 8 per cent of the buyers this year.

Wall, Floor, and Woodwork Cleaners

The high point of 76 per cent in the 1945 use of these products was clearly surpassed during 1946, and was established at 88 per cent of all families surveyed in the Milwaukee area this year. The number of brands used fell from 208 in 1945 to 189 in 1946. "Soilax" still leads the Milwaukee market with a 17.5 per cent preference rating although it was preferred by 20 per cent of the buyers in 1945. "Badger Mastercraft" continues in second place, preferred by 11 per cent of the buyers, while "Ivory" bar soap with 9 per cent has replaced "Climalene" in third place.

Bleaching Fluids

Reversing a four year trend toward increased acceptance of bottled bleaches in the Milwaukee area, the market receded a bit in number of buyers this year. Currently, 82 per cent of Milwaukee families buy bleaching fluids as compared with 84 per cent in 1945. Several new brands were brought out in 1946, increasing the total sold in this market to 75. "Hilex" increased its substantial lead in 1945 and is now preferred by 48 per cent of Milwaukee housewives. "Mag," in second place with a consumer preference figure of 10 per cent, has dropped a percent, while "Fleecy White" and

"Linco" with 7 per cent are next in the list.

Scouring Cleaners

The use of scouring cleaners among Milwaukee housewives has fallen off a little in the past year. Currently, they are used by 95 per cent of the buyers as against 97 per cent in 1945. There are 31 brands being sold this year, compared with 36 in 1945. Still in first place, "Kitchen Klenzer" fell back 3 per cent to a rating of 27 per cent in 1946, "Old Dutch" remaining in second place with 24.5 per cent and "Bab-O" increasing its hold on third place in the list with 21 per cent in 1946 as compared with 15 per cent in 1945.

Toilet Bowl Cleaners

Toilet bowl cleaners continued their gain in use by Milwaukee families to a new high of 68.6 per cent this year. This increase in buying appears to be reflected by an increase in the number of brands to 33, an increase of seven over last year. In the years 1942 to 1944 nearly 40 brands were marketed. Only two brands are significant in the Milwaukee market. "Sani-Flush," the most popular, dropped about 4 per cent to a figure of 46 per cent this year but still enjoys a lead over "Bowlene" which is used by 40 per cent of the buyers. Both products show a loss in distribution among the independent grocers since 1945.

Quick-Sudsing Substitutes

The subject of soap substitutes was included in the Milwaukee consumer analysis for the first time in 1946. Of the families surveyed, 25.5 per cent are buying these products. Six brands are on the market, "Dreft" leading with 56 per cent of the buyers, "Vel" attracting 46 per cent, and "Swel" showing up with 5 per cent of the buyers.

Liquid Shampoos

The increase in the use of liquid shampoos continues. Of the Milwaukee families, 67.5 used such products in 1946, but this year 74 per cent of the families were buying shampoos in liquid form. It is interesting to note

that the highest percentage of families in any group buying liquid shampoo, 78 per cent, is in the lowest income group. Seventeen new brands are found on the market, the 1946 total of 161 reversing a three year declining trend. "Drene" leads with 28 per cent of the buyers. "Fitch's" is second with 17 per cent. "Halo," with 12 per cent, has replaced "Watkins" in third place, and "Kreml" is fourth with 8 per cent.

Lather Shaving Creams

The lather type of shaving cream was bought by 37.5 per cent of the Milwaukee men in 1946. There has been no change in this market. The trend in the number of brands continues sharply downward with 80 brands stocked locally in 1944, 62 in 1945, 47 in 1946. "Palmolive" still retains preference leadership with 34 per cent of the buyers, "Williams" being second with 14 per cent, "Lifebuoy" third with 12 per cent, and "Colgate" fourth with 10 per cent.

Brushless Shaving Creams

Brushless shaving creams have shown a decrease in use in Milwaukee, as have the lather type creams. This may be due to a slight increase in the use of shaving soaps in bowls and other products. Of the men covered by this survey, 27.6 per cent are using brushless types in 1946 as compared with 28.2 per cent in 1945. The number of brands has increased, however, from 38 in 1945 to 44 in 1946. "Palmolive," with 18 per cent now leads "Burma Shave" which has dropped a per cent to 17 per cent in 1946. "Barbasol" at 16 per cent still is in third place and "Molle" fourth, preferred by 16 per cent of Milwaukee brushless shave buyers.

Tooth Paste

The use of dentifrices in paste form continues to increase, while use in powder form decreases. The liquid types were not reported on in 1946 by the Milwaukee survey. The per cent of toothpaste buyers moved from 69 per cent in 1945 to 73 per cent in 1946. The number of brands sold in the Milwaukee market remains about the same this year at 50. "Colgate"

is the most popular seller, and is preferred by 32 per cent of the buyers. "Pepsodent" is second with 26, "Ipana" listing third with 13.

Tooth Powder

The use of powdered dentifrice has shown a further decline in the Milwaukee market to but 48 per cent of the buyers in 1946, as compared with 49 per cent in 1945. Despite this, seven new brands are on the market this year, bringing the total to 59 as compared with 52 in 1945, 68 in 1944 and 75 in 1943. "Dr. Lyons," the most popular brand, shows a fractional gain to 44 per cent in 1946. "Pepsodent," second in popularity, is listed with 20 per cent of buyer preference, and "Colgate" is third with 15 per cent, the latter two showing a slight increase in preference this year.

Bluing Flakes or Crystals

The Milwaukee survey has established that about 34 per cent of all families use bluing flakes or crystals. The largest percentage, 35 per cent, in any one income group using these products represents the lowest income group. There are 17 such products on the Milwaukee market. The "La France" brand, with a 56 per cent popularity rating, is the largest seller. "Blu-White," with a 42 per cent rating, is the only other product with an important position in the market.

Buying Habits

The Milwaukee survey points to a continued increase in the buying of water softeners, quick-sudsing soap substitutes, and various cleaners designed for special uses. All income groups show about the same buying capacity for wall, floor, and woodwork cleaners. The lighter income group is the largest buyer of scouring cleansers, toilet bowl cleansers, and quick-sudsing soap substitutes, whereas the middle income groups go in more strongly for the buying of water softeners and soap crystals. The lower income groups show up as the greatest buyers of bluing flakes or crystals. Department stores continue to be the largest outlets for toiletries and cosmetics, and are the preferred purchasing source

for 60 per cent of the buyers—no change from 1945. Each year since 1944, fewer people in Milwaukee have bought these products in chain and independent drug stores, sales in chain stores dropping from 10 per cent in

1945 to 9 per cent in 1946 and, in independent stores, from 20 per cent in 1945 to 19 per cent in 1946. The five and ten cent stores' share of the market increased slightly in 1945, and is now just above 8 per cent.



Brand Preferences of Ex-Service Men

A SURVEY of soap buying habits was recently made among ex-service men. Three groups participated in the survey, divided as to age from 17 to 25, 26 to 38, and over 38 years old. The largest number of participants in the survey were from the Army, with smaller numbers from the Air Force, Navy, Marine Corps, and Coast Guard, in that order. The per cent employed was 93, the per cent of those married, 53. Yes and No answers to the following questions were obtained.

Soap

Do you use any soap that happens to be in the house? Yes 45 per cent, No 55 per cent. Do you prefer a man's type of soap? Yes 68 per cent, No 32 per cent. What brand of soap do you prefer?

	%
1. Lifebuoy	30
2. Palmolive	17
3. Lux	13
4. Ivory	10
5. Camay	7
6. Lava	6
7. Woodbury	4
8. Cashmere Bouquet ..	3
9. Sweetheart	2
10. Swan	2

Shaving Cream

What type of shaving cream do you use?

	%
Regular	72
Brushless	25
Both	3

What type did you use in service?

	%
Regular	67
Brushless	30
Both	3

What type did you use before entering the service?

	%
Regular	76
Brushless	22
Both	2

If you changed types while in service—Why?

Changed to brushless—61 per cent.

Reason	%
Convenience	32
Faster shave	15
Easier to use	15
Requires less space	15
Better shave	70
Miscellaneous	13

Changed to regular—31 per cent.

Reason	%
No electric razor	46
Better results	17
Brushless not available ..	12
Easier	8
Miscellaneous	17

Changed to shaving stick—8 per cent. Reason—Army orders, convenience, easier to carry, cheaper.

What brand of shaving cream do you buy?

	%
1. Palmolive	18
2. Colgate	17
3. Williams	16
4. Yardley	6
5. Gillette	6
6. Mennen	5
7. Barbasol	5
8. Burma Shave	4
9. Ingram	3
10. Molle	3

Shampoo

Do you use a packaged shampoo? Yes 46 per cent, No. 54 per cent. What brand?

	%
1. Fitch	44
2. Drene	11
3. Kreml	6
4. Packer's Tar	5
5. Coconut oil	3.5
6. Lucky Tiger	3
7. Conti-Castile	2
8. Wildroot	2
9. Jeris	2
10. Palmolive	2

Are you buying the same drug products as you did in the service? Yes 87 per cent, No 13 per cent.

Are you buying the same drug products as you did before entering the service? Yes 91 per cent, No 9 per cent. *Am. Legion Magazine.*



WITH the soap shortage now raging worse than at any time since the beginning of the war, grocers and housewives alike are looking around hard to find something to take the place of soap. So far, their efforts have not been too successful. Good replacements have been and are continuing to be found, as in all fields of merchandise, but they cannot be obtained in quantities large enough to satisfy today's greatly increased demands. Inferior replacements are fairly plentifully available in some cases, but discriminating merchants are passing these by. Housewives, too, after unhappy initial experiences with some of today's soap substitutes are not reordering, even though at first they are quite willing and even eager to buy anything that is offered in the place of soaps.

Without question, the most numerous of the newer products designed to fill in for scarce soap, are the various synthetic detergents. Synthetic detergents have a wonderful opportunity today to break into a market that

What's The Housewife Buying To Take The Place of Soap ?

normally would be one of the toughest to crack. With soapers operating under severe fat and oil quota restrictions, and with the demand for soap greater than ever, synthetic detergents are finding the door to the retail market wide open. The public has been made thoroughly aware of the unusual properties of synthetic detergents and, as in the case of DDT insecticides, is eager to buy and try them.

The long range aspects of the present-day situation may well be far-reaching. If the synthetic or soapless type cleaner is tried and found to be superior to soap not only will soap makers and soap consumers be profoundly affected by the change, but the farmers supplying fats and oils for soaps will feel it as well. The Department of Agriculture, which pro-

fesses to be the farmer's friend is adamant in refusing to raise quotas of fats and oils for use in the manufacture of soap, and yet by this very action it may be dealing the farmer a blow from which he may never recover. However, it should be remembered that the present market continues to be a "seller's market" and the consumer buys what he is offered, or goes without. This is equally applicable in the case of synthetic detergents. If the store keeper has no soap, Mrs. Housewife buys synthetic detergents or whatever else the grocer may have to offer in the way of cleaning compounds. For this reason it is difficult if not impossible to evaluate accurately the long-term outlook for the various soap replacements.

One of the new synthetic products which is attracting considerable at-

tention, and reported to be selling very well is "Scoop." Although retailers report that they are having some difficulty in getting all the "Scoop" they would like, opinion seems to be that the product, which is selling well now, is here to stay. It is about two years old, and was put on the market by F-R Corp., New York, about a year ago. Originally tested and sold in the New York area, "Scoop" is now sold nationally. It retails for 19 cents in a one pound package. The product itself is in a crystal form. According to a spokesman for the distributor, the success of the product "has exceeded our most hopeful expectations." The problem confronting the F-R corporation is to expand production capacity. To this end the corporation contemplates building a new plant very shortly at an undisclosed location in New Jersey.

"Tish," a contemporary of "Scoop," introduced by American Soap Powder Works, Brooklyn, a little over a year ago, is similar to "Scoop." Following its introduction, the company announced that it would increase its advertising by 50 per cent because the initial sales reaction to the product has been so good.

Another soapless detergent comparable and competitive to "Scoop" and "Tish" is "Vel," manufactured by Colgate-Palmolive-Peet Co., of Jersey City, N. J. "Vel," which doubled in popularity, as compared with 1945, in two categories of the recently published, 1946 consumer analysis, conducted by the Milwaukee *Journal*, was due to be heavily promoted with a large advertising campaign scheduled to break in the metropolitan New York area around June 20. The leader in the synthetic detergent category of Milwaukee *Journal's* 1946 consumer analysis was "Dreft," made by Procter & Gamble. Although 1946 was the first year in which these products were covered by the survey, 58,376 families in the Greater Milwaukee area or 25.5 per cent, reported that they used "soap substitutes." Of these, 55.8 per cent (32,574 families) used "Dreft"; 45.8 per cent (26,736 families) used "Vel"; 4.5 per cent (2,-

627 families) used "Swel" (Lever Brothers) and 1.1 per cent (642 families) used miscellaneous products of this sort.

Further evidence of the popularity of these synthetic detergents for household cleaning purposes is given by a spokesman for Crossley, Inc., New York opinion research bureau, which is currently conducting a survey of cleaning preparation popularity. They say synthetic detergents are showing up surprisingly well on their records.

Shortly after its introduction, plans were announced for expanding distribution of "Solventol" a synthetic cleaner for household, industrial and institutional purposes sold by Solventol Chemical Products, Inc., Detroit. Originally the marketing of this product was limited, but shortly after its initial appearance its sales area was enlarged to include thirty large cities adjacent to the Great Lakes, with outlets in grocery, drug and department stores. Incidentally, the bulk of soap substitutes, like most soap products, are sold through grocery stores.

Among other new products of the soapless cleaner variety mentioned as soap replacements, permanent or otherwise are "K.P.," a new, all-purpose, powdered soapless cleaner which was introduced recently by K. P. Chemical Co., New York; "Nylon Suds," said to be liquid, soapless suds for washing fine fabrics, and handled by Johnson Laboratories, Chicago; "Kenda," a synthetic detergent washing powder, made by Kenda Corp., New York, to retail at 25 cents for one and a half pounds packed in glass jars. Another important newcomer, "Glim," produced by General Aniline & Film Corp., New York, was introduced a month ago in test campaigns in Pennsylvania and Michigan. "Glim" is a synthetic detergent in liquid form. It comes packaged four-ounces to a bottle and retails for 27 cents. A thimble-full is said to be all that is required for a single use, and while its explicit purpose is for dishwashing, it can be used for a number of other types of washing. "Ethylene Cleaner" being marketed

by Ethyl Corp., New York, is another of the newer products that has been promoted vigorously and widely. It comes in liquid form and is being advocated for use in connection with a number of different types of cleaning problems. Another synthetic to be reckoned with is Procter & Gamble's recently acquired "Spic and Span." This product is being vigorously promoted by P. & G., via sampling, etc., and seems to be making headway in the market.

It is estimated that there are about a thousand synthetic detergents being currently marketed. Some, of course, are "cats and dogs" being turned out for a "quick clean up" and to take advantage of today's shortages. Others are sold locally in a very modest manner. The third group, from which the "Ivory's," "Palmolives" and "Sweethearts" of the future synthetic detergent field will come, is being merchandised along the same lines, and usually by the same firms, that are making and selling the better known soaps of today. The third group of products have behind them the sales organizations, and the technique and experience in selling cleaning products which would seem to be necessary for long-term sales success.

IN the face of the current soap scarcity, all stores are limiting the amount of soap sold to individual customers. Only occasionally are soaps put on display. Most of the smaller stores and the independent retail outlets prefer to keep soaps under the counter or in the back room. While the scarcity is general and extends to all types of soap, it has been noted and commented on that toilet soaps are not quite as hard to get as laundry and dishwashing soaps. Novelty soaps, higher priced toilet and bath soaps and so-called hardwater soaps, all three groups sold mainly through department stores, seem almost abundant. Here the economics of the situation is taking a hand apparently. Soapers are quite logically putting their scarce fats and oils into the product that brings the largest return. The striking contrast achieved by this hus-

banding of fats and oils can be easily observed by a visit to almost any department store that sells both fancy bath and toilet soaps and household soaps. The section of the department selling the household soaps is about as well cared for as a "Dead-End kid," while the plentiful, higher priced, better groomed, fancy toilet and bath soaps, usually are found in the lush toilet goods department, with its svelt and expensively fragrant atmosphere.

In the soap section of the department of one very large store a soap display consisted of: about 30 bottles of ammonia, two cans of the store's own brand of scouring cleanser, three bars of unwrapped, "G.I." style, yellow laundry soap and four cans of Garber's "Misroschi" kosher cleaner.

The soap buyer for one large chain of retail grocery stores said that some surplus "G.I." laundry soap was being offered around the trade, reporting that he had not bought any because the soap was unwrapped and the price was too high. He also said that some of the large producers of laundry soaps hadn't produced any for some time now, and that even though a 20 per cent increase in the prices of these soaps has recently gone into effect, soap salesmen are not promising deliveries on yellow or brown laundry soaps for at least two months. It will take at least that long for production schedules to be rearranged to shift over to the manufacture of laundry soaps, he was told. At the same time, he added, soap salesmen continue to urge the large grocery chains to promote the salvage of waste household fats. Fat salvage will continue well into 1947, this buyer reported he had been informed.

Another buyer for a large grocery chain stated that he did not think the situation on laundry soaps would return to normal until government "rejects" and surplus laundry soaps are cleared up. This buyer reported that the situation in some of their stores had gotten so bad that people were buying wall and floor cleaners for washing clothes, and were getting bad results. He said it was too early yet to tell what reaction synthetic detergents are meeting with by users.

Some of the reason for the shortage of laundry soaps is the large amount made for export, this buyer said he believed.

Remedies for the solution of the soap shortage are numerous. For instance, "Oakite" advertises in local newspapers using such copy as this: "More than ever depend upon Oakite for all your daily and weekly wash during this serious soap shortage. . . Oakite makes your soap go farther . . . oftentimes as high as 50 percent." The headline for the advertisement quoted above is: "Oakite cleans outdoor furniture."

On the unusual side is "soap powder" sold in 25 pound wooden scrub buckets. These retail for around \$5.55, or about 22 cents a pound. Although they are promoted as "soap powders," nothing is said about their actual soap content. There is a line of advertising copy on the label which states: "the water softening ingredient is already added." Essential Chemicals Co., Milwaukee, has a product whose

packaging answers the "wooden scrub bucket" description.

One of the commonest soap substitutes currently being marketed is a combination of one of the alkalies with a synthetic detergent, using either soda ash or trisodium phosphate, where obtainable. One such product selling in the New York marketing area is sold loose in a brown paper bag, three pounds for 39 cents. The detergent powers of the product were said to be poor.

Although packagers of synthetic detergents claim their principal headache is meeting demand for their products and increasing production facilities, there are now fat and oil quota restrictions on synthetic detergents. These were instituted by the Department of Agriculture, March 11, and are contained in an amendment to WFO-42b, by changing the definition of soap to include synthetic detergents. Synthetics still seem to continue in ample supply, however, while soap supplies grow shorter daily.



Soap Fat Use Drops

REPORTED consumption of primary fats and oils for soap declined to 392,205,000 lbs. during the first quarter of 1946 from a figure of 401,054,000 lbs. for the final three months of 1945, according to figures released last month by the Bureau of the Census of the U. S. Department of Commerce. Inedible tallow continues to be the leading soap fat, and although total first quarter use of fats showed a decline from the final quarter of 1945, the amount of tallow used in soap in the first three months of 1946 increased. There were 239,260,000 lbs. of inedible tallow reported consumed for soap during the first quarter of this year, as against 208,673,000 pounds for the last three months of 1945. In the first quarter of 1946 consumption of grease was 84,146,000 lbs. as compared with 83,558,000 lbs. in the final quarter of 1945.

Third in the fat consumption list was crude coconut oil, of which 12,410,000 lbs. were reported used in the first quarter of this year, as compared with 10,608,000 for the last quarter of 1945. This rise reflects the recent increase in copra imports from the Philippines. Consumption of lard for soap fell sharply in the first quarter of 1946. In the last three months of 1945, 12,288,000 lbs. of lard reported consumed for soap; in this year's first quarter, 597,000 lbs. Reported use of fish oil for soap in the first three months of 1946 dropped to 10,323,000 lbs. from a figure of 35,805,000 lbs. for the final 1945 quarter. Refined babassu consumption, reported at 3,360,000 lbs. for the fourth quarter of 1945, rose to 10,298,000 lbs. in the first quarter of this year. Consumption of crude babassu dropped slightly in the first quarter of 1946 to 6,187,000 lbs. from a figure of 6,474,000 lbs. for the previous quarter.



A NECESSARY prerequisite to a discussion of dry cleaning soaps is a review of the subject of dry cleaning itself. Mr. C. B. Randall in his book the "Dry Cleaning Department" describes dry cleaning as follows:

"Dry Cleaning is a method of cleaning wearing apparel, household furnishings, and other textile materials by means of immersion and mechanical action in dry solvent, either petroleum distillates or chlorinated hydrocarbons with the addition of soaps and other cleaning aids. This method of cleansing articles of a textile nature loosens insoluble soil and dissolves soil of a greasy nature with the minimum effect on the size, shape, appearance, dressing or sizing and dressmaking details, such as pleats and shirring."

Few people realize the importance of the dry cleaning industry, particularly with reference to the successful utilization of synthetic textiles. Many type of synthetic fabrics would not enjoy the wide use they have today if it were not for dry cleaning. If the only method of cleaning available today were wet cleaning or laundering, many synthetic fabrics would be unserviceable.

Dry cleaning is as the name implies cleaning in a "dry" solvent. The solvent in the dry cleaning industry is of the same function as "water" in the laundry. Unfortunately during the

cleaning, the solvent cannot be discarded in the same manner as water may be after use, because of its higher cost. If the solvent could be discarded, the formulation of dry cleaning soaps would be much more simple. Due to the fact that the solvent must be reclaimed, it has been necessary to devise equipment for this purpose. Various methods have been introduced and this necessitates different forms or types of dry cleaning soaps, depending on the method used to reclaim the solvent.

The various methods that are used are as follows:—

1. Allowing "used" solvent to trickle through caustic solution.
2. Centrifuging.
3. "Filtration"—with filter powder. (Some plants use adsorption powder in addition.)
4. Vacuum distillation
5. Use of activated carbon.

The most popular and successful methods used in the large majority of plants today are filtration and vacuum distillation, along with use of activated carbon. The cleaner is confronted with other problems in addition to the problem of cleaning. Reclaiming the solvent and maintaining it in good condition are a continuing necessity. The laundry has no such problem.

Dry cleaning soaps are made by saponification of fatty acids with alkalis, with a minimum amount of water present in the finished product. The saponifying agents used most often are

caustic potash, some caustic soda, ammonia, lime, and organic alkalies such as triethanolamine. The fatty acids used are highly refined oleic acid or "red oil" and stearic acid. Some soaps are made entirely of red oil or a mixture of red oil and stearic acid.

If the fatty acids are completely neutralized with the alkali and a neutral soap formed, the resulting soap would be insoluble in the solvent, making it unsatisfactory for use. For this reason the fatty acids are only partially neutralized and a certain amount of excess free fatty acids allowed to remain, which acts as a "coupling" agent. This results in the production of dry cleaning soaps of various degrees of solubility in the dry cleaning solvent, depending on the excess of free fatty acids. These soaps are described as superfatted soaps.

The actual soap content of dry cleaning soaps may vary from ten to fifty per cent, with a free fatty acid excess of ten to twenty per cent, the remainder being water, various organic solvents such as petroleum solvent, benzine, ethyl alcohol, isopropyl alcohol, butanol, cellusolve solvents, acetate esters, chlorinated solvent, hexalin, etc. A diluent, normally a petroleum solvent, must be incorporated in the soap base to give the soap proper consistency and help make it useable, by being more readily soluble or dispersible in solvent.

Dry cleaning soaps vary in their physical characteristics, some being a

* Before Natl. Assn. Insecticide & Disinfectant Mfrs., French Lick, Ind., June 18, 1940.

paste similar to a firm petrolatum, others heavy viscous liquids, and still others of a thin liquid consistency. In recent years synthetic soap bases have replaced potash soaps to a considerable extent. Sulfated and sulfonated oils are now being used quite generally in the manufacture of drycleaning soaps.

Dry cleaning soaps have changed in their composition quite significantly in the past few years. The introduction of the pressure filter and the vacuum still have been responsible more than any other factor. Years ago the dry cleaner used mostly the superfatted soaps or detergents that are neutral and some that are alkaline, most being of a liquid nature.

THE various dry cleaning soaps or detergents may be grouped quite logically on the basis of their physical characteristics, falling into three groups as follows:

1. Paste type.
2. Semi-liquid (usually of a heavy viscous consistency but will flow when poured).
3. Liquid.

Before discussing these various types of soaps, it would be advisable to mention the requirements of a dry cleaning soap and what a dry cleaner expects. It has been proven, without any doubt, that a dry cleaning soap definitely produces better cleaning. A cleaner is confronted with inert insoluble soil. The water soluble soil consists of sugar stains, fruit stains and ingredients from perspiration, etc. The insoluble soil is chiefly of a carbon, and silica nature.

The paste type soaps, group (1) superfatted, containing a small amount of moisture dispersible in the solvent, have the highest degree of inert insoluble soil removal. The next in order of efficiency are the dry cleaning soaps falling in group (2). This group, however, increases the efficiency of the removal of water soluble soil. In group (3) you will find dry cleaning soaps having the highest degree of water soluble soil removal but the poorest in the removal of inert insoluble soil. The failure of efficient removal of water soluble soil in the cleaning process creates more work for the spotting de-

partment. This is a costly operation and slows down production. A cleaner, therefore, expects the soaps to have a high degree of inert insoluble soil removal and also ability to remove water-soluble soil.

The most universal solvent of course is water. A dry cleaning soap having a high content of water or capable of finely dispersing water in the solvent has the greatest water soluble dirt removal capacity. Recently types of dry cleaning soaps have been developed containing a minimum amount of water, with the added characteristic of properly controlling larger additions of moisture. These soaps are mostly liquid and have a twofold purpose. I have called attention to the fact that in order to obtain the highest inert insoluble soil removal power, a minimum of water should be present in the soap. Therefore a cleaner can use the soap without any further addition of moisture for the removal of inert insoluble soil. Having completed this operation, a pre-determined amount of moisture is incorporated with the soap, depending on the size of the load, and garments run for the removal of the water soluble soil. A cleaner is limited as to the amount of water that can be used safely, for excess will cause shrinkage of the fabric.

In the formulation of a dry cleaning soap, one must bear in mind that the successful use of the soap will depend largely on the type equipment in the dry cleaning plant. Where the solvent is being reclaimed by means of caustic treatment, the soap must be capable of settling out of the solvent readily. The soaps of Group (1) namely, "superfatted soaps" have been most successful. Should the plant have a pressure filter however, difficulty is experienced, for these soaps cause excessive pressure. This can be eliminated with proper operation; however production may be slowed up.

In Group (2) the soaps have as their main characteristics, the ability to remove a high percentage of inert soluble soil and also a good degree of removal of water soluble soil, without causing pressure in the filter. Their solubility in the solvent is such that

they are largely removable, and remain in the precoat of the filter. By proper treatment of solvent with caustic solution, they are removable from the solvent.

The soaps of Group (3) are the most varied in composition. The solubility in the solvent differs, some being soluble, optically clear, and others dispersing in the solvent, forming a cloudy suspension. These soaps are capable of absorbing further additions of moisture and cause no pressure on the filter. They are used mostly in plants equipped with vacuum stills, as this is the best way of reclaiming the used solvent.

Besides the removal of soil from garments, a dry cleaning soap is used to increase the electrical conductivity of the solvent. Solvent by itself is a poor conductor. Static electric charges are set up during the cleaning process that at times can produce serious explosions. The water in the dry cleaning soap is the most important single factor that increases the electrical conductivity of the solvent.

The manner in which dry cleaning soaps function to give maximum soil removal is as little understood as is "soap" in the laundry. Suffice it to say that proper control of moisture contained in the dry cleaning soap, and any additional moisture used with the soap, is of paramount importance. The moisture content of the fabric itself in the garment being cleaned has a direct bearing on the cleaning efficiency.

In conclusion, the prime requisite of a dry cleaning soap should be:
Stability in composition

No objectionable odors in the soap itself, nor should the soap contribute any odors to the garments.

The soap should cause a minimum amount of pressure in the filter and not corrode equipment.

It should increase the electrical conductivity of the solvent.

Should possess a high degree of both inert insoluble soil and water soluble soil removal power.

Should not discolor the solvent.

Should produce a minimum amount of foam. Foam is not desirable in the dry cleaning process.

RAW MATERIALS

FOR THE SOAP AND ALLIED INDUSTRIES

TALLOW

RED OIL

CAUSTIC SODA

STEARIC ACID

CAUSTIC POTASH

COCOANUT OIL

DRUMS—TANK CARS—TANK WAGONS

ANIMAL OILS, FATS,

CHEMICALS, VEGETABLE OILS

Every raw material necessary for the manufacture of soap and allied products is carried in stock and is available at the right price for immediate delivery to your door.

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POWDER
BORAX
BICARBONATE OF
SODA
CARBON
TETRACHLORIDE
CALCIUM
CHLORIDE

CAUSTIC SODA
CAUSTIC POTASH
DISODIUM
PHOSPHATE
GLAUBER'S SALTS
GLYCERINE
METASILICATE
OXALIC ACID
POTASSIUM
CARBONATE
SAL AMMONIAC

SALT
SAL SODA
SILICATE OF SODA
SODA ASH
TRISODIUM
PHOSPHATE
CASTOR OIL
COCOANUT OIL
CORN OIL
COTTONSEED OIL
LARD OIL

NEATSFOOT OIL
OLEIC ACID-RED
OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
RAPESEED OIL
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**EASTERN INDUSTRIES DIVISION
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RIDGEFIELD, N. J.

Sugar Beet Appoints Ashton

Jack C. Ashton, for about 15 years with West Disinfecting Co., Long Island City, N. Y., is now associated with the chemical by-products division of Sugar Beet Products Co., Saginaw, Mich. He will cover St. Louis and all of southern Illinois for the firm, making his headquarters in St. Louis.

New Quarters for Par

A contract has been awarded for the construction of a new four-story factory building at 1100 Seventy-eighth Ave., Oakland, Calif., for the Par Soap Company. The new concrete structure will cost approximately \$100,000.

Exec. Changes at Babbitt

Alan Mendleson, formerly executive vice-president, has been named president of B. T. Babbitt, Inc., New York, succeeding Leon Mendleson, retired.

Alton Mendleson is vice-president in charge of manufacturing, and Samuel Mendleson, chairman of the board and executive vice-president. L. J. Gumpert has been appointed vice-president in charge of sales, and John E. Sammond, treasurer.

BIMS Golf at Baltusrol

The BIMS of New York held their first golf tournament of 1946 on Thursday, June 27th, at the Baltusrol Golf Club, Short Hills, N. J. About 100 members and guests turned out.

"Rain Drops" Promoted

Advertising plans for "Rain Drops," synthetic detergent introduced in 1940 by Bu-Tay Products, Inc., Los Angeles, are discussed in the June 21 issue of *Tide*. The company's advertising budget for the product in 1946 is \$600,000, and in 1947 it will exceed the million dollar mark, according to the *Tide* story. Starting in a 1,500 square foot plant, Bu-Tay now occupies a factory covering four and one-half acres in Los Angeles.

Woulfe Pepsodent Head

Henry F. Woulfe has been named president of the Pepsodent Division of Lever Bros. Co., succeeding



HENRY F. WOULFE

Charles Luckman, whose election as president of Lever Bros. Co. was announced last month. Mr. Woulfe, a native of Chicago, was previously Pepsodent's vice president and general manager. He joined Pepsodent in 1927 as purchasing agent, and later took on additional duties in development and production. In 1938 he took over plant operations, production and planning. He was named vice president in charge of production in 1943.

Lever Man Joins Agency

H. B. Hilcomb, manager of department store promotion for Lever Bros. Co., Cambridge, for the past 10 years with headquarters in Boston, has joined Dixie Advertisers, Jackson, Miss., as director of its textile and style division, the agency announced late in June.

Boston BIMS Golf

The Boston BIMS met for golf at the Nashua Country Club, Nashua, N. H., on July 18th, with Paul Mulvanity acting as member host.

USDA Policy on Exports

In an editorial in our June issue we mentioned a protest by a well-known soap executive to the Secretary of Agriculture regarding the continued exportation of soaps in view of the present oil and fat shortage in the United States. An answer was forthcoming from an official of the U. S. Dept. of Agriculture, who writes: "Your position is very understandable in advocating the reduction of exports of soaps inasmuch as we have a shortage in this country. Soap exports are being controlled closely by export licenses issued by the Department of Commerce within allocations established by the Department of Agriculture. It is the policy of the Government to reduce to a minimum the exportation of soap and under present allocations less than two per cent of the total amount of fats and oils used in soap in this country are for export purposes. We are continuously considering means by which the domestic soap shortage may be relieved."

Barnett Pepsodent V-P

James A. Barnett, who has been vice-president in charge of advertising, merchandising and new product developing for Pepsodent Division of Lever Bros. Company, has been elected vice-president and general manager to succeed Henry F. Woulfe, recently chosen president.

P. & G. Copra Warehouse

Contract has been awarded for construction of a copra storage warehouse at Long Beach, Calif., for Procter & Gamble Manufacturing Company.

Turco Names Franzreb

Turco Products, Inc., Los Angeles, recently announced the appointment of Thomas G. Franzreb to the technical service division staff of the



YOU NEED GOBS-O-SUDS

Target's Superlative New Modern Cleaner

FOR ALL CLEANING

WOODWORK · VENETIAN BLINDS
WALLS · WINDOWS · CARPETS
FURNITURE · UPHOLSTERY
LAUNDRY · DISHES · GLASSWARE
GREASY UTENSILS · BOTTLES
BAKERY EQUIPMENT · DAIRY
EQUIPMENT · SODA FOUNTAINS
ALL TYPES OF FLOORS

**We sell only through
JOBBERs**

QUICK SURE CLEANSING

Cleansing action is not measured by quantity of suds, but you need suds to hold loosened dirt in suspension and keep it from redepositing. Gobs-O-Suds is a scientifically prepared compound which contains no soap, abrasives or animal fats. It yields copious, rich suds that chase dirt and grime before them. Its quick-acting solvents remove dirt and grease instantly with almost no rubbing or scrubbing. It removes lipstick stains from glassware and fatty substances from beer glasses. Gobs-O-Suds dissolves completely in hard or soft water. Rinses readily, leaving no greasy or slippery residue and no odor or after-taste.



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company. He will make his headquarters at the Los Angeles office. A graduate of Wagner College, he has done post-graduate work in chemistry at Columbia University. In 1944, Mr. Franzreb entered the Navy and spent two years as materials laboratory officer in the engineering division at Jacksonville, Fla. He was released from active duty in April of this year as a lieutenant in the Naval reserve.

Armour Process Licensed

Armour and Company has issued a license to General Mills Inc. granting General Mills rights under Armour patents to operate a fats and oil chemical plant for the production of fractionated fatty acids from animal, vegetable and marine oils. The Armour fractionating processes will be used at the new chemical plant which General Mills recently announced would be built at Kankakee, Illinois. The processes enable the separation into their component parts of mixed fatty acids present in fats and oils. After being separated the fatty acids are converted chemically into new products for which wide use has been found in the manufacture of alkyd resins and other protective coatings, natural and synthetic rubber, soaps and synthetic detergents, lubricating greases, as flotation agents for concentrating the mineral content in ores and also as intermediates in the chemical industry.

Tests New Tooth Powder

Burma-Vita Co., Minneapolis, makers of "Burma-Shave," recently began a test sales-advertising campaign in Cedar Rapids, Ia., on behalf of their new tooth powder "Burma-Vita." The powder, which is sold in a jar at 35c, is said to contain "Alcofoam," a higher alcohol ester. Instead of applying the powder to the brush in customary fashion,—via the palm of the hand,—advertising for "Burma-Vita Tooth Powder" recommends wetting the brush, shaking off the excess water and dipping the brush into the jar. Also unusual is the packaging of a powder in a jar.

Reynolds Colgate Counsel

Colgate - Palmolive - Peet Company, Jersey City, N. J., announced on June 17th that H. W. Reynolds, formerly assistant general counsel, has



H. W. REYNOLDS

been promoted to the post of general counsel for the company. He succeeds Mason Trowbridge, who has retired after 30 years service with Colgate. Mr. Reynolds joined the company's legal department in April, 1943, and was made assistant general counsel in 1944.

Chicago Perfumers Golf

Fifty-two members and guests of the Chicago Perfumery, Soap and Extract Association participated in the second golf tournament of the season on June 20th at the Sky Crest Country Club at Prairie View, Illinois.

Prize winners included the following: Class "A": Kielhofer, Scott, James and Nelson; Class "B": Nay, Stanton, Hall and Sappenfield; Class "C": McNess, Browning, Otis and Kuehne; Class "D": Jennings, Robinson, Tribble and Topper; Guests: Ludwig, Bradley, Quanci and Baldwin; Blind Bogey Winners: Otis, Arch, Sewell, Edmon, Browning and Drach.

The July tournament was scheduled for July 16th at Olympia Fields Country Club.

Keating Joins Turco

Turco Products, Inc., Los Angeles, manufacturers of cleaning and maintenance compounds announce the recent affiliation of Donald Keating

with their technical service staff. A graduate of U.C.L.A. and California Institute of Technology, Mr. Keating served in the Navy as executive officer on an L.S.T. seeing action in the Pacific Theatre at Leyte and Okinawa. He joins Turco as technical service representative and will specialize in problems relative to cleaning and maintenance in the general industrial field.

Consultants Affiliate

John W. McCutcheon, consulting chemist, 475 Fifth Ave., New York, announces that he has formed an association with Charles E. Crawford, marketing consultant who has had many years buying and selling experience in the petroleum field. Mr. McCutcheon is now able to offer laboratory facilities, including research work as well as routine testing. Product development, soap plant design and general consulting service in the soap field are now available through Mr. McCutcheon's organization.

Phila. Quartz Anniversary

The Philadelphia Quartz Company, Philadelphia, marks its 115th anniversary on July 21st. This company was established as a soap company in 1831 by Joseph Elkinton of Philadelphia. Early in the 1860's the Elkinton firm began to manufacture silicate of soda for use in their soaps. The present firm name, Philadelphia Quartz Company, was first used in 1864 when a partnership was formed to produce silicate of soda in a separate plant. In 1904, the company discontinued soap making and silicates of soda became their chief products. The company introduced two new industrial alkalies, sodium metasilicate and sodium sesquisilicate, in 1931, the company's hundredth anniversary year.

Thomas W. Elkinton is now the president of the company. The Philadelphia Quartz Company operates nine plants in the east and mid-west, and a California subsidiary operates three plants on the west coast. There is a Canadian subsidiary, National Silicates, Ltd., with offices and plant at Toronto.



New vice-presidents for Lever Brothers are (top, l. to r.) W. R. Veale, vice-president and general manager; J. R. Gilman, vice-president in charge of advertising; R. F. Elder, vice-president in charge of research; A. P. MacIntyre, vice-president in charge of finance; (below l.) W. W. McKee, vice-president in charge of sales; and (below r.) A. B. Stewart, vice-president in charge of production.



Lever Names Six V.P.'s

The appointment of six new vice-presidents, five of whom will head the five new departments into which the company's entire operation has been divided, was announced last month by Lever Brothers Co., Cambridge, Mass. The reorganization of the executive structure of the company follows the recent announcement of the election of Charles Luckman as the new Lever president. The six new vice-presidents, who were also elected members of the board of directors, are: Robert F. Elder, vice-president in charge of consumer research. A graduate of Harvard, and for eight years a member of the faculty of Massachusetts Institute of Technology, he joined the company in 1937 as director of research. In 1945, he was named assistant to the president, with special responsibilities in the economic and merchandising fields. John R. Gilman, a Harvard graduate and with Lever Bros. since 1918, has been named vice-president in charge of advertising. He became assistant advertising manager in 1924, and associate advertising manager in 1927. He played a large part in the development of "Lux" toilet soap, and had complete charge of all "Lux" advertising. Another new vice-president, Arthur P. MacIntyre will be in charge of finance. He came to Lever Bros. in 1920 as an accountant, and became comptroller in 1922 and treasurer in 1935. He attended Dartmouth College, later joining Exchange

Trust Co. of Boston. Walter W. McKee, one-time manager of toilet articles for Colgate-Palmolive-Peet Co. in the Cincinnati District, where he was associated with Mr. Luckman, then district manager for soaps, joined the Pepsodent division of Lever Bros. as vice-president in charge of sales in 1944.

Alexander B. Stewart, who since 1933 has been assistant to the president, has been named vice-president in charge of production. A native of Scotland and an American veteran of the first world war, after varied experience in production and selling, joined Lever Bros. in 1924 as a sales supervisor. He later assisted in the installation of modern production systems, construction of a modern research department, and in development of packaging, new plants, labor-management policies.

The sixth new executive is W. R. Veale, who was elected as vice-president and general manager. In a newly created post, Mr. Veale, who has been manager of Frankfort Distillers Corp. will be directly responsible to Mr. Luckman for the company's entire operation. After a year of selling insurance, he joined Palmolive Co., now Colgate-Palmolive-Peet Co. as clerk in the advertising department. In 1935, he became manager of the domestic soap department. In 1938, he joined Frankfort Distillers as manager, with responsibility for general operations.

Chicago U. Honors Oleson

Wrisley B. Oleson, president of the Allen B. Wrisley Co., Chicago, was one of eleven alumni of the University of Chicago to whom citations of merit were awarded during the institution's commencement exercises last month. Mr. Oleson is national president of Chicago University's alumni association.

Calgon Appoints Houck

Calgon, Inc., Pittsburgh producer of water conditioning chemicals, announces the appointment of Miles B. Houck, Jr., to the Pacific Coast territory for the company's laundry division, following his return from the armed forces. Mr. Houck will make headquarters in San Francisco, and will assist Calgon laundry distributors in that city, Los Angeles, Seattle, Portland and other Coast cities. Prior to serving in the European and Pacific war theaters, Mr. Houck was connected with the domestic Calgon division, located on the Pacific Coast.

Decide Arden-FTC Case

The United States Circuit Court of Appeals for the second circuit handed down a decision last month in the Elizabeth Arden, Inc. vs. Federal Trade Commission case, involving the legality of the practice of furnishing demonstrators to selected retailers. The court's decision was that furnishing demonstrators, or contributing to paying them, is illegal under the terms of the Robinson-Patman Act, unless the same advantages are furnished to all competing retailers on proportionally equal terms.

Rheem Promotions

The Rheem Manufacturing Company announces the appointment of Andrew H. Campbell as general manager of sales for the Eastern Container Division. His assistant will be G. Wesley Gates, formerly in charge of container sales for New England and New York. Mr. Campbell is a former vice president of Atlas Steel Barrel Corporation, Bayonne, N. J., and since its acquisition by Rheem, he had been general manager.

Bahlburg Joins Wyandotte

John Bahlburg, Jr. joined the New York sales force of the Michigan Alkali Division of Wyandotte



JOHN BAHLBURG

Chemicals Corporation June 1. His duties will include the development of sales contacts for the organic program of the company in the eastern part of the country. Mr. Bahlburg is a graduate of the Polytechnic Institute of Brooklyn. He was recently released with the rank of Major by the Army Air Force Photographic Mapping Service after two years in the China-India operations.

Mahoney With Dav.-Young

Fred Mahoney is a newly-appointed representative of the Davies-Young Soap Co., Dayton, Ohio, selling dry cleaning and laundry soaps and cleaning aids. His experience has included many years of service in some of the largest dry cleaning plants in the East. His headquarters are in Baltimore, and he will cover Maryland, Washington, D. C., Virginia, and West Virginia.

Modern Lighting at Swift

Modernization of lighting facilities in the soap packaging division of Swift & Co., Chicago, by installation of fluorescent fixtures, has attracted considerable attention from illuminating engineers who are said to regard the recently completed installation as a model of its kind. General functional efficiency has been improved by the

greater ease of seeing, says a recent story in *Edison Industrial News*, house organ of the Commonwealth Edison Co. Malfunctioning of equipment is detected promptly and corrective maintenance speedily facilitated. The improved lighting has also been found to have a favorable effect on employee morale.

Lever Construction Plans

Lever Brothers Co., Cambridge, Mass., will start construction of new soap plants at St. Louis and Los Angeles within the next few months and will also make substantial addition to Chicago area plants, Charles Luckman, president of the company, announced in Chicago last month. The Chicago facilities, he said will be completely remodeled to provide for manufacture of soap products exclusively. Drug lines previously produced in them will be transferred to the Pepsodent division plants, as part of a logical reorganization plan.

Accompanying Mr. Luckman on the Chicago visit was Lord Leverhulme II, governor of the board of Lever Bros., Unilever Ltd., of London, who is making a tour of inspection of the Lever soap companies.

Mr. Luckman was quoted as stating that he has ordered a cut in the company's radio advertising and an increase in newspaper and magazine lineage until the ratio between the two media will be 50-50.

New Oakite Product

Oakite Products Co., New York, is distributing a 20-page booklet describing a new chemical product, "Oakite Tri-San," for eliminating odors and controlling and preventing mold growth. The product, recently developed, cleans and disinfects, it is claimed, when applied to walls, ceilings, shelves and other interior places.

Edwin Allen Retires

Edwin M. Allen retired last month as chairman of the board of Mathieson Alkali Works, New York, but will keep his position as a director of the company. He joined the Mathieson organization as president in 1919.

MCA Elects Munson

Charles S. Munson, chairman of the executive committee of U. S. Industrial Chemicals, Inc., New York,



CHARLES MUNSON

was elected president of the Manufacturing Chemists Association of the United States at the recent annual meeting at Skytop Lodge, Cresco, Pa., June 6. He succeeds H. L. Derby, president of American Cyanamid & Chemical Corp.

Salvador Soap Market

A data sheet dealing with the market for toilet soaps in El Salvador, has been issued by the Industrial Reference Service of the U. S. Department of Commerce, Washington, D. C. Consumption of toilet soap in El Salvador was 71,000 kilos in 1944, as compared with 102,000 kilos in 1943. There are two manufacturers of toilet soap in El Salvador who produce about 25 per cent of the toilet soap consumed locally. Imports in 1944 were 52,893 kilos, worth \$37,683. The entire imports came from the United States.

UN Asks Fats for Food

Diversion to edible uses of as much fat and oil as it is found feasible to divert from the production of toilet soap, paint, varnish and other non-food products, was asked by a committee of the Food and Agricultural Organization of the United Nations at the recent meeting in Washington dealing with urgent world-wide food problems.

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New Location for Detrex

The main offices and plant headquarters of the Detrex Corporation are now at 14331 Woodrow Wilson Ave., Detroit, the mailing address being P. O. Box 501, Detroit, 32, Mich. All matters of administration, sales, purchasing, advertising, public relations, manufacturing, accounting and legal functions will be handled at this new location. The Detroit Corporation also announces the opening of its new Grand Rapids office and warehouse at 435 Ionia Ave., S. W., Grand Rapids, 2, Michigan.

Coconut Oil Differential

By proclamation of the President of the United States on June 27, the suspension of the two cent differential on the processing tax on coconut oil of non-Philippine origin has been continued until 30 days after the President proclaims that adequate supplies are once again available in the Philippines for export to the United States. The previous suspension was due to run out on June 30. The Department of Agriculture had recommended a six months' suspension. President Roxas of the Philippines refused to concur in the proclamation.

UNRRA's Soap Needs

C. A. Peterson, chief of UNRRA's fats, oils and soap section, recently announced that UNRRA's requirements for soap for the second half of 1946 are approximately 45,000 tons. Procurement of 25,000 tons of this amount is being negotiated outside the United States. UNRRA is also said to be considering purchasing the remaining 20,000 tons in the form of synthetic soap and has already placed a trial order for 2,000 tons in order to conserve soap fat in the U. S.

Notes on T. G. A. Meeting

McCall's magazine recently distributed a set of notes taken at the convention of the Toilet Goods Association in New York to registrants at the meeting. The notes, in the form of a notebook, are entitled: "We Made a Note of it for You." They sum-

marize the talks and papers given at the meeting and are available from *McCall's*.

Hardesty Advances McLeod

William G. McLeod, chemical director since Sept., 1945, of W. C. Hardesty Co., at Dover, O., has been



WM. G. McLEOD

named general manager of the company to succeed C. F. Williams, it was announced last month. Mr. Williams, who has been connected with the Dover plant for the past six years, will be located in Washington, D. C. Mr. McLeod was director of product research for Oscar Mayer & Co., Madison, Wis., for four years before joining the Hardesty organization. A past president of the American Oil Chemists' Society, he is a graduate of Clemson College of South Carolina, where he received a bachelor of science degree in chemistry and agriculture.

A. D. & C. A. Set Golf Dates

The Allied Drug & Cosmetic Association of 15005 Ashton Road, Detroit 23, Michigan announces the remaining portion of this season's golf schedule to be July 23d, August 27th, and Sept. 24th. All tournaments will be held at Birmingham Country Club, Birmingham, Michigan. At the Detroit-Leland Hotel on June 12th, the Association held its regular monthly luncheon meeting. Briant Sando, general sales director, Courier-Journal Job Printing Co., Louisville, spoke on selling and advertising in today's changing markets.

Fortune Discusses Luckman

Charles Luckman, newly elected president of Lever Bros. Co., Cambridge, Mass., is the subject of a special article appearing in the July issue of *Fortune* magazine. In the article tracing the 15-year business career of this 37-year-old executive, some of the highlights of his spectacular rise to the presidency of one of the largest soap companies in the U. S. are detailed. Originally an architect, Mr. Luckman turned to soap selling in 1931 for Colgate-Palmolive-Peet Co., as his first job. Three years later he was in charge of Colgate's largest sales district. From there a year later he went over to Pepsodent Co. as sales manager, becoming president at the age of 34. When Lever Bros. purchased Pepsodent Co. in 1944, Mr. Luckman remained as president, and became a vice-president of Lever. In two years, he succeeded Francis A. Countway as president of the British-Dutch owned, American soap company that has estimated sales of \$200,000,000 a year. The *Fortune* article further points out that Lever is contemplating the erection of two more major soap plants in the U. S., which when completed will make a total of nine.

Symposium on Premiums

Use of premiums will continue to play a large part in sales promotions planned by various soap manufacturers, according to deductions from a survey made recently by the magazine, *Premium Practice*.

Consumers are definitely more premium-minded than during the war, according to J. M. Davidson, premium manager of Colgate-Palmolive-Peet Co., who was quoted at length in the magazine's May symposium. Mr. Davidson reports that redemptions are far ahead of those for last year's corresponding months. Use of premiums will be continued in connection with the company's Octagon products and also other brands in a cooperative premium arrangement, he stated.

R. S. Doersam of Procter & Gamble Co.'s advertising and promotion department, stated in the symposium that P & G's premium business will be expanded.

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The following trade-marks were published in the June issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Mark Applications

STYLE KING—This in upper and lower case, bold, script letters for toilet soap, lather shaving cream and shaving soap. Filed Aug. 6, 1945 by S. Buchsbaum & Co., Chicago. Claims use since Mar. 2, 1943.

NOVELERA—This in upper case, open letters for medicated shaving soap. Filed Oct. 3, 1945 by Novelera Products, Inc., Chicago. Claims use since Aug. 21, 1945.

The drawing of a life preserver and an anchor for shoe polish and shoe dressing. Filed Oct. 30, 1945 by Anchor Shoe Polish Mfg. Co., Chicago. Claims use since Nov. 7, 1919.

DEZERT-PURPUL—This in upper case, extra bold letters for wall, tile and glass cleaner. Filed Apr. 17, 1945 by Strand Reneau Co., Lynwood, Calif. Claims use since Apr. 17, 1945.

NOCTIL—This in upper and lower case, extra bold, black letters for soapless powder for general household washing and cleaning. Filed Dec. 18, 1945 by Rumford Chemical Works, Rumford, R. I. Claims use since Nov. 13, 1945.

SUNOCO—This in upper case, extra bold letters for pre-wax cleaner for automobile bodies, etc. Filed Feb. 9, 1946 by Sun Oil Co., Philadelphia. Claims use since Aug. 19, 1944.

NUOCIDE—This in upper case, bold letters for toxicants for use in insecticides. Filed Mar. 20, 1945 by Nuodex Products Co., Elizabeth, N. J. Claims use since Nov., 1944.

MARY KING—This in upper and lower case, extra bold, black, script letters for hair shampoo. Filed Aug.

6, 1945 by J. R. Watkins Co., Winona, Minn. Claims use since Jan. 25, 1929.

THE BUBBLIN ZOO—This in upper and lower case, bold and medium, script and block letters for bubble bath preparation. Filed Nov. 19, 1945 by Julius V. Madsen Co., Los Angeles. Claims use since Apr., 1945.

CLOUDKIST—This in upper case, bold letters for shampoos. Filed Jan. 26, 1946 by Associated Products, Inc., Chicago. Claims use since Dec. 10, 1945.

CLOUDSWEPT—This in upper case, bold letters for shampoos. Filed Jan. 26, 1946 by Associated Products, Inc., Chicago. Claims use since Dec. 10, 1945.

WELSITE—This in upper and lower case, bold, shadow letters for wax cleaner and polish for floors, woodwork and furniture. Filed Oct. 18, 1945 by Twin City Shellac Co., Brooklyn. Claims use since Sept. 4, 1945.

WALTSADE—This in upper case, bold letters beneath the fanciful drawing of a woman polishing a grand piano for furniture polish. Filed Dec. 15, 1945 by Waltsade Mfg. Co., New York. Claims use since Sept. 1, 1945.

CHRO-M-BRITE—This in upper and lower case, outline, script letters for preparation for cleaning, polishing and removing rust from metals. Filed Nov. 3, 1941 by Eastman Laboratories, Ltd., Portsmouth, O. Claims use since July 1, 1939.

BOLO—This in upper and lower case, outline initials above the drawing of a toilet bowl on a rectangular background for preparation for cleaning toilet bowls. Filed July 9, 1945 by Louis Shapiro, Chicago. Claims use since Sept. 1, 1944.

CARDINAL—This in upper case, extra bold, black letters for soaps. Filed Aug. 31, 1945 by Richard Hudnut, New York. Claims use since Aug. 2, 1945.

FIZZADENT—This in upper case, extra black, bold letters for cleaning solution for dentures and bridge work. Filed Sept. 13, 1945 by Ralph L. Len-

hart, New York. Claims use since Aug. 31, 1945.

MASTODON—This in upper and lower case, bold, script letters for soaps and cleansing compounds for general use. Filed Oct. 15, 1945 by Harold M. Redman, Pontiac, Mich. Claims use since Sept. 1, 1944.

RECORD—This in upper and lower case, script letters on a black rectangular background for cleaners, metal polishes and shaving cream. Filed Nov. 8, 1945 by Durite Corp., Detroit. Claims use since Oct. 15, 1945.

CEB—This in upper case, extra large and bold, shadow letters for synthetic detergents for general cleaning purposes. Filed Nov. 8, 1945 by CEB Manufacturing Co., Elizabeth, N. J. Claims use since Aug., 1945.

WONDER SUDS—This in upper case, extra bold, black letters for soap and soap preparations. Filed Nov. 10, 1945 by Beach Brothers, Dubuque, Ia. Claims use since Aug. 1, 1917.

VAPOCOLOR—This in upper case, bold, stencil letters for cleaner. Filed Nov. 13, 1945 by General Solvents Sales Co., Rochester, N. Y. Claims use since Oct. 29, 1945.

CALLAWAY MILLS—This in upper case, bold letters superimposed against a tower in the background for treated polishing cloths. Filed Dec. 11, 1945 by Callaway Mills, La Grange, Ga. Claims use since Oct. 10, 1945.

VETO—This in upper and lower case, extra bold and large, black, script letters for toilet soap. Filed Dec. 14, 1945 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since Nov. 15, 1945.

LAUNDERETTE—This in upper and lower case, medium letters for soap. Filed Dec. 18, 1945 by Launderette Soap Corp., New York. Claims use since Dec. 1, 1945.

O.D.—This in upper case, extra bold and large, black letters for powdered detergent. Filed Dec. 18, 1945 by O.D. Chemical Corp., New York. Claims use since Dec., 1944.

GLEE—This in upper case, extra large, bold stencil letters for detergent compound. Filed Dec. 21, 1945 by R. S. Ghiselin, Chicago. Claims use since Mar. 21, 1945.

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TROXOL — This in upper case, bold letters for chemical composition for removing rust scale and tarnish from metals. Filed Aug. 31, 1945 by Waverly Petroleum Products Co., Philadelphia. Claims use since Aug. 2, 1945.

SEA FOAM—This in upper and lower case, bold, script letters for solvents for grease and as a cleaner. Filed Dec. 5, 1945 by Sea Foam Products Co., Munster, Ind. Claims use since Mar. 1, 1945.

"Hy-Po" — This in upper case, extra bold, black letters for liquid insecticide. Filed Dec. 11, 1945 by York Pharmacal Co., St. Louis. Claims use since Sept. 5, 1945.

SUNOCO—This in upper case, bold letters for chemical radiator cleaner. Filed Feb. 9, 1946 by Sun Oil Co., Philadelphia. Claim use since May 16, 1944.

BANSECT—This in upper case, bold letters for louse powder. Filed Mar. 1, 1946 by Lederle Laboratories, Inc., New York. Claims use since Feb. 15, 1946.

RECORD — This in upper and lower case, outline, script letters for automobile polishing wax, paint remover preparation, self-polishing floor wax, furniture polish and automobile polish. Filed Nov. 8, 1945 by Durite Corp., Detroit. Claims use since Oct. 15, 1945.

DERGEX—This in upper case, extra bold letters for detergent for cleaning blood transfusion equipment, surgical instruments and hospital laboratory glassware. Filed June 5, 1944 by Don Baxter, Inc., Glendale, Calif. Claims use since Apr. 27, 1944.

ZEPHYROID LUBRICOLANT—This in upper and lower case script and extra bold, black, block letters for soap to be used as a coolant fluid for cutting and grinding. Filed Dec. 23, 1944 by Du Bois Co., Cincinnati. Claims use since June 25, 1943.

LJK-A-NU E M G—This in upper case, bold and medium letters for compound in liquid form for cleaning rugs, carpets, upholstery, woodwork, leather, etc. Filed Mar. 30, 1945 by Everett M. Goens, Richmond, Calif. Claims use since Dec. 1944.

GLISS—This in upper case, extra

bold, black letters for cleaning preparation in the form of a cream or paste. Filed Aug. 29, 1945 by Beach Soap Co., Lawrence, Mass. Claims use since July 18, 1924.

TRIM—This in lower case, script letters for shaving cream. Filed Sept. 17, 1945 by House of Warren, Chicago. Claims use since Sept. 1, 1942.

CLEANO GREASE SWEEP—This in upper case, bold, stencil letters for floor sweeping compounds. Filed Nov. 5, 1945 by Cleano Products Manufacturing Co., St. Louis. Claims use since Oct. 1, 1935.

FLUFF SHEEN — This in upper case, bold letters for water soluble, paste for general purpose cleaning. Filed Nov. 10, 1945 by Fluff Sheen Cleaners, Chicago. Claims use since Aug. 1, 1930.

THE CLEANER WITH THE FEATHER TOUCH—This in upper case, bold letters for non-inflammable, liquid, paint cleaner. Filed Nov. 21, 1945 by Soil-Off Manufacturing Co., Glendale, Calif. Claims use since June 6, 1945.

BIZ—This in upper case, extra bold, black letters for cleaner, cleanser and detergent. Filed Dec. 29, 1945 by Procter & Gamble Co., Cincinnati. Claims use since Dec. 1, 1945.

SHOO—This in upper case, extra bold, black letters for cleaner, cleanser and detergent. Filed Dec. 29, 1945 by Procter & Gamble Co., Cincinnati. Claims use since Dec. 1, 1945.

SKURRY — This in upper case, extra bold, black letters for cleaner, cleanser and detergent. Filed Dec. 29, 1945 by Procter & Gamble Co., Cincinnati. Claims use since Dec. 1, 1945.

FOAMING MIST—This in upper and lower case, medium, script letters for bubble bath compounds. Filed Mar. 19, 1945 by Guy J. Banta, Los Angeles, Calif. Claims use since Feb. 20, 1944.

STIM ROOT—This in upper and lower case, extra bold, black letters for insecticides. Filed May 25, 1945 by Plant Products Co., Blue Point, New York. Claims use since Mar. 21, 1944.

PERSONALIZED — This in upper and lower case, medium, script letters for hair tinting shampoos. Filed June 12, 1945 by Clairol, Inc., Stamford, Conn. Claims use since Jan. 10, 1938.

RED DEVIL TRIPLE X — This in upper case bold and reverse letters around the fanciful drawing of a devil within a circular design for soot and carbon remover. Filed July 16, 1945 by Marine Electrolysis Eliminator Co., Seattle, Wash. Claims use since Jan. 15, 1937.

GOLDEN ARROW—This in upper case, bold letters partially encircling the fanciful drawing of a woman in ancient garb posed with a bow, for shampoos. Filed Oct. 31, 1945 by Golden Arrow Toiletries, New York. Claims use since Sept. 11, 1944.

SAFESIDE — This in upper case, extra bold, black letters for germicide and disinfectant. Filed Nov. 16, 1945 by G. E. Conkey Co., Cleveland. Claims use since Apr. 23, 1945.

OIL OF SEVEN TEMPLES—This in upper case, bold letters for insecticides. Filed Nov. 16, 1945 by Lowers Pharmacy, Marion, O. Claims use since 1930.

SPARKLE SHEEN — This in upper case, bold letters on a triangular background for hair rinse. Filed Nov. 20, 1945 by Sparkle Sheen Co., South Bend, Ind. Claims use since July, 1934.

KEE-POFF—This in upper case, extra bold, black letters on the fanciful drawing of a lawn sign for insect repellent. Filed Feb. 23, 1946 by R. M. Hollingshead Corp., Camden, N. J. Claims use since Jan. 16, 1945.

KYSO—This in extra bold letters for liquid preparation for cleaning and polishing furniture, automobiles, hard wood floors, finished indoor woodwork, etc. Filed July 10, 1945 by Standard Oil Co., Louisville, Ky. Claims use since Feb., 1923.

MARY KING—This in upper and lower case, extra bold, script letters for toilet soap. Filed Aug. 6, 1945 by J. R. Watkins Co., Winona, Minn. Claims use since Mar. 10, 1930.

GRAND UNION — This in upper case, open letters for silver polish, shaving cream, general household cleaner, washing powder and toilet soap. Filed Sept. 4, 1945 by Grand Union Co., New York. Claims use since 1888 on toilet soap, since 1922 on silver polish, since 1928 on shaving
(Turn to Page 148H)

Where Freedom from Iron is a "Must" Use Hooker Sulfides

Eight parts per million (.000008 of a pound per pound of product) is as much iron as you will ever find in a pound of Hooker Sodium Sulfide. Manufacturing refinements and purification techniques developed by Hooker chemical engineers bring you this Sulfide that can be safely used in practically every case where an iron free sulfide is needed. And in Hooker Sodium Sulphhydrate the iron content has been brought down to a maximum of 5 parts per million.

Where your processes require sulfides, you can be sure of purity of your products by using uniformly high purity Hooker Sodium Sulfide and Sodium Sulphhydrate. A request on your company letterhead will bring Technical Data Sheets and samples.

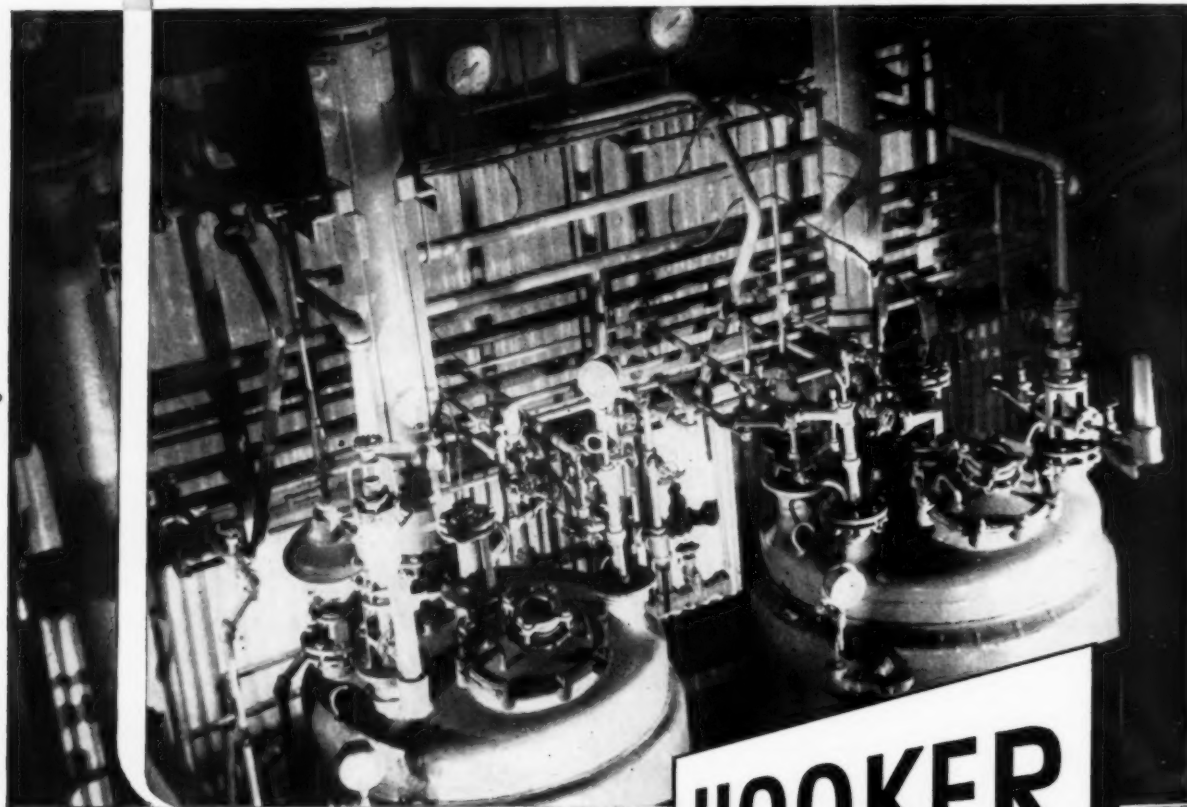
SODIUM SULFIDE, Na_2S , a light yellow colored solid in flake form, soluble in water, slightly soluble in alcohol, insoluble in ether.

Analysis	
Sodium Sulfide	60 to 62%
Sodium Chloride	1.5% Max.
Other Sodium Salts	2.0% Max.
Iron	8ppm Max.
All other metals	1ppm Max.
Water of Crystallization	36.3 to 34.5%
Shipping Containers, Drums 90 and 330 lbs. net.	

SODIUM SULFHYDRATE, NaSH , a light yellow colored solid in flake form. Soluble in water and alcohol, insoluble in ether.

Analysis	
Sodium Sulphhydrate	70 to 72%
Sodium Hydroxide	0%
Sodium Sulfide	1 to 2%
Sodium Chloride	1% Max.
Other Sodium Salts	1% Max.
Iron	5ppm Max.
All other metals	1ppm Max.
Water of crystallization	48 to 20%
Shipping Containers, Drums 90 and 330 lbs. net.	

"Process equipment where iron-free Hooker Sulfides are being used."



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CHEMICALS**

BIDS AND AWARDS

USDA Asks Soap Bids

Bids on 15,000,000 pounds of laundry soap were asked on June 24, by the U. S. Department of Agriculture, Production and Marketing Administration, Fats and Oils Branch, for the Commodity Credit Corp. Bids were to be submitted not later than July 3. Delivery is required during the third quarter of this year, according to the U.S.D.A. announcement. It was also pointed out that additional purchases may be made by the CCC.

FWA Soap Bids

In a recent opening for miscellaneous supplies by the Federal Works Agency, Public Buildings Administration, Office of Buildings Management, Washington, D. C., the following bids were received on: (a) an unspecified quantity of liquid soap, Trio Chemical Works, Brooklyn, \$1.815; Crystal Soap & Chemical Co., Philadelphia, \$1.980; Penetone Co., Tenaflly, N. J., \$2.013; R. M. Hollingshead Corp., Camden, N. J., \$2.090; Alex. C. Ferguson Co., Philadelphia, \$2.112; Lanair Chemical Corp., Chicago, \$2.227.50; Wm. Messer Corp., New York, \$2.226; James Good Co., Philadelphia, \$340.29, bidding on 810 gallons in 54-gallon drums at 42 cents; Joseph F. Frankle Co., Philadelphia, \$2.585, and Dixie Janitor Supply Co., Washington, \$2.700, and on (b) 600 cans of cleaner compound, R. M. Hollingshead Corp., Camden, N. J., \$126; Mathers-Lamm Paper Co., Washington, D. C., \$144; Dixie Janitor Supply Co., Washington, D. C., \$174, and United Sanitary Chemical Co., Baltimore, \$180.

Army QMC Bids

The following bids were received in a recent opening for miscellaneous supplies by the Army Quartermaster Corps, Boston, on 2,000 gallons of floor wax: Technical Laboratories, Boston, \$1.65; Continental Chemical Co., Cleveland, \$2.05; E. Stanley Wires, Boston, \$3.25, Veritas

Co., Jamaica Plain, Mass., \$1.50, accepted; Shawmut Specialty Co., Jamaica Plain, Mass., \$1.75 and Swan Co., Boston, \$1.80. In another Quartermaster opening, the following bids were received on 312,000 pounds of dishwashing compound: B. P. Ducas Co., Jersey City, N. J., 7.85 cents; Economics Laboratory, St. Paul, Minn., 7.12 cents, accepted, and Calgon, Inc., Pittsburgh, 7.75 cents.

Soap Award to Peck's

Peck's Products Co., St. Louis, received the award of 10,000 pounds of soap powder and 6,480 pounds of soap chips with a bid of 4.25 cents in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.

Misc. Treasury Bids

Among the bids submitted in a recent opening for miscellaneous supplies by the Treasury Department, Procurement division, Washington, were those on: (a) 1,000 pounds of naphthalene flake, Alex. C. Ferguson Co., Philadelphia, 8.9 cents a pound and Reilly Tar & Chemical Corp., Newark, N. J., 9.241 cents a pound; and on (b) 15,000 pounds of scouring powder compound, Hunnewell Soap Co., Cincinnati, 3 cents a pound; National Milling & Chemical Co., Philadelphia, 2.3 cents; Baum's Castorine Co., Rome, N. Y., 5.65 cents; American Soap & Washoline Co., Cohoes, N. Y., 2.28 cents, and Imperial Products Co., Philadelphia, 2.3 cents. (c) on 250 gallons of cresol compound solution, West Disinfecting Co., Long Island City, N. Y., \$1.66 a gallon for 265 gallons; Harley Soap Co., Philadelphia \$1.20 a gallon; Crystal Soap & Chemical Co., Philadelphia, \$1.50, drums included and Gerson-Stewart Co., Cleveland, \$1.30; and (d) 110 gallons of liquid insecticide, Crystal Soap & Chemical Co., Philadelphia, \$2.30 a gallon; R. M. Hollingshead Corp., Camden, N. J., 98 cents; Dor-

sett-Jones, Inc., Baltimore, 70 cents; McCormick & Co., Baltimore, \$2.65; Uncle Sam Chemical Co., New York, \$1.35; Capital Chemical Co., Washington, 93 cents; Gulf Oil Corp., Philadelphia, \$1.35; Industrial Distributors, New York, \$1.78; Saspin Chemicals, Chicago, \$1.75; Columbia Organic Chemicals, Chicago, \$1.25 and Lanair Chemical Corp., Chicago, \$1.53.

P.O. Soap, Wax Bids

The following bids were received on 8,000 gallons of general purpose liquid wax and 15,000 and 54,000 pounds of paste soap in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.: wax, R. M. Hollingshead Corp., Camden, N. J., 58 cents; Wonder Chemical Co., Elizabeth, N. J., \$2.50 a gallon; Windsor Wax Co., Hoboken, N. J., 75 cents; International Metal & Polish Co., Indianapolis, \$1.50; Penetone Co., Tenaflly, N. J., 99 cents and Buckingham Wax Corp., Long Island City, N. Y., \$1.014. On the soap the following bids were entered: Cole Laboratories, Long Island City, N. Y., item 1, 12.25 cents and item 2, 11.25 cents; Trio Chemical Works, Brooklyn, item 1, 9.5 cents, item 2, 9.5 cents; Schaeffer Bros. & Powell Mfg. Co., St. Louis, item 1, 6.6 cents, item 2, 6 cents; Harley Soap Co., Philadelphia, item 1, 7.3 cents and item 2, 6.9 cents; Fischer Industrial Corp., Cincinnati, item 1, 6.1 cents, item 2, 5.91 cents; Crystal Soap & Chemical Co., Philadelphia, item 1, 13 cents and item 2, 12 cents; and Clifton Chemical Co., New York, item 1, 12.5 cents, item 2, 10.5 cents.

Army Soap to Stanley

John T. Stanley Co., New York, submitted the only bid on 10,000 cakes of laundry soap in a recent opening for miscellaneous supplies by the Army Engineer Corps, Philadelphia. The Stanley bid of 3.5 cents was accepted.

F. B. Ross Co. Moves

After June 14th, the Frank R. Ross Co., formerly of Hoboken, N. J., will be located at 6-10 Ash St., Jersey City 4, N. J. Telephone BErgen 3-4512. F. B. Ross Co. import and refine waxes.



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— — — when Antoine Chiris first advertised the establishment of the House of Chiris in Grasse, in the French Alpes Maritimes, the firm has played a leading part in the Essential Oil and Floral Absolute industry throughout the world.

Despite the troubled times of the last 200 years, the House of Chiris has achieved a steady progress. Normally employing a staff of 7,000, the firm is now represented wherever Essential Oil production plants are to be found.

Throughout the years of World War 2, when the American House of Chiris was completely cut off from its affiliations in France, it continued, under wartime restrictions to serve its clients in the best tradition of the House.

Chiris' New York laboratories produce the finest aromatic creations which can be supplied under present conditions. The situation is improving rapidly. Not only has Chiris, New York, been able to import a limited number of essential oils and floral absolutes from France and French empire sources, but its activities in this country are progressing in line with the improved raw material situation.

We look forward to the future with confidence, fully prepared for the resumption of normal and expanding trade, and are ready with our experience, knowledge, and world-wide ramifications to serve the trade again as we have done in the past.

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As of July 1, 1946

Although at this writing it is still too early to gauge accurately the effect of the abolition of the OPA on prices of raw materials entering the manufacture of soaps and sanitary chemicals, it does appear that in general there will be some price advances. There seems to be a note of caution expressed by those trade representatives who have been questioned on the effect on prices of the passing of the OPA. In almost all cases the attitude is "wait until the situation is clarified." That attitude seems to be based on possible future price control action on the part of Congress. However, although there have been a number of general assertions by manufacturers that they would do everything possible to "hold the line," expressions of the need to advance prices in keeping with

increased raw material costs are frequently heard.

There are contradictory reports appearing regarding prices on heavy chemicals and alkali in particular. On the one hand the view that the basic chemicals will not increase in price is heard, while on the other, reports of anticipated increases are published. Lending strength to the latter point of view is the fact that just before the OPA was done away with, applications for numerous price increases had been addressed to the price control agency. Increases of around 15 per cent were asked and expected on caustic soda, soda ash and chlorine, according to reports late in June. At that time, it was stated, the 15 per cent increase might not be sufficient to meet higher costs in the industry. In view of this situation, it seems likely that without

governmental restrictions price advances are in the offing.

Price increases on imported vegetable oils are now predicted, which will reflect increases in production costs at the source.

In summarizing the fats and oils outlook, the Department of Agriculture recently pointed out that because livestock-feed prices were unfavorable to feeders of hogs and cattle, as a result of increases in prices of feed-grains and oilseed meals, there would be a decline in production of lard, tallow and grease in 1947. With price controls removed, however, hog and cattle raisers may be in a position to increase the price of their products, which in turn would act as a stimulant to production.

In spite of some reduction in the total domestic output of fats and

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BEAD FORM
SYNTHETIC DETERGENT
(Alkyl Aryl Sulphonate)

(Low Alkalinity—High Percentage Active Ingredient)

Specific Gravity—One (Approximately 10 times as bulky as soda ash.)

Supply Not Affected by Government Order Restricting Fat Use

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1871 — Our 75th Year of Service — 1946

oils in 1946, as a result of, among other things, a 25 per cent reduction in the 1945 cotton crop and a consequent cut in the size of the cottonseed oil output, increases are expected this year in the production of lard and grease, according to the Department of Agriculture.

There seems to be some confusion in the trade regarding the allocation of coconut oil with the passing, July 1, of Copra Export Management Co. Although importation of copra and coconut oil is back in the hands of private concerns, coconut oil is still being allocated by the U. S. Department of Agriculture. Since copra is reported to be coming to the U. S. in good quantities (44,905 long tons in June, as compared with 31,970 long tons in May from the Philippines) and since coconut oil is to be allotted on the basis of the availability of the oil rather than on a quarterly basis, some concern has been expressed over recent failure to issue allocations to soap makers. Users of edible coconut oil have received their allocations recently.

In connection with the absence of word of a pending allocation for soap makers, there is some talk that the fate of the OPA is somehow connected with the question.

Importers are said to be optimistic about the copra situation, and report that by the end of the year monthly rates of importation may be above those of pre-war years.

Coconut oil can be imported at the rate of 200,000 long tons annually duty free by terms of the recently signed Philippine Trade Act, which runs from 1946 to 1954. Thereafter the duty free quota will be reduced by 10,000 long tons each year until 1957, when none will be permitted to enter duty free. The Act also established a maximum for total imports of Philippine coconut oil, both free and dutiable, at 200,000 tons each year from 1946 to 1973, inclusive.

Price increases following the exodus of the OPA were recorded on three grades of rosin, turpentine, flaxseed and shellac. Gum rosin rose from 3 to 13 cents a hundred pounds; tur-

pentine six and one-half cents a gallon; flaxseed five cents a bushel and shellac between 30 and 40c per lb. Tallow and glycerine have been quoted sharply higher.

Another historical note concerns rotenone, price ceilings on which were raised by the OPA in mid-June. Price ceilings on rotenone bearing roots were set at 28 cents a pound and 39 cents a pound for the powder, landed at New York.

Some increase in cost of essential oils may be effected to catch up with mounting import and production costs, according to one large factor in the industry. Perfuming materials are suffering from the effects of the coal strike and will continue to do so for some time, a market report of Givaudan-Delawanna declares. Supplies of coal and coke for transportation, illumination, and general industrial purposes, seriously reduced by the strike, must be replenished before sufficient quantities of coal tar derivatives are available for the synthetic aromatics industry.



RAW MATERIALS

SPECIALTIES
FOR THE SOAP INDUSTRY

FOR THE SOAP INDUSTRY

FROM ALL PARTS OF THE WORLD

LANOLIN—all grades.

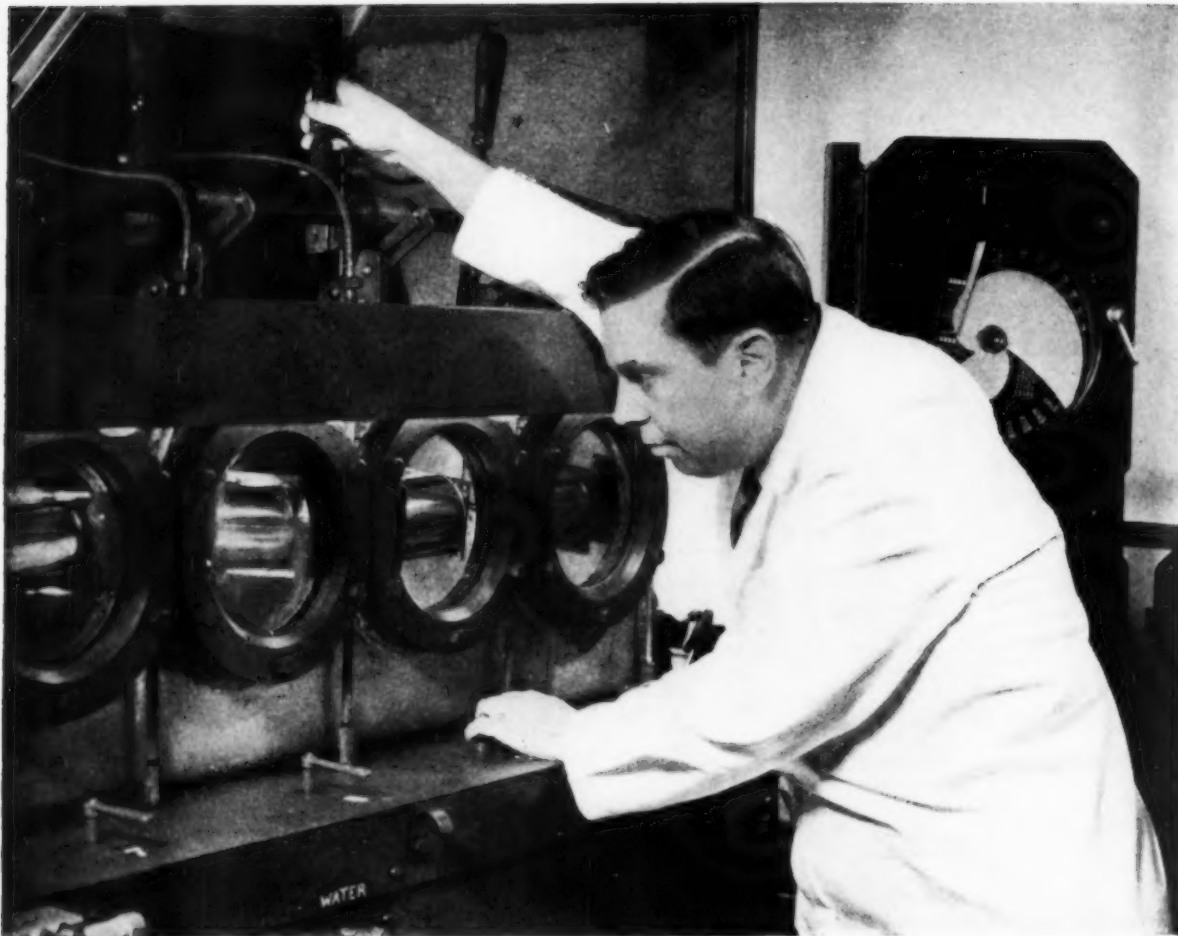
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LECITHIN—obtained from Corn Oil, an effective emulsifying and detergent agent; also helps to stabilize lather and inhibit hydrolysis.

THE LAMEPONS—organic wetting, cleansing and foaming agent.

QUADRAFOS—a stable polyphosphate.

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But, this visual check is not enough for us. We want to know what type of abuse the can will stand in processing and at what point beyond normal use the seam will let go.

And this is just what the odd-looking machine in the picture will tell us.

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It will subject the inside of a can to

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It will do the same thing for temperatures, too.

It keeps the cans under these stresses until the cans fail.

The machine is called a "pressure tester for determining creep resistance of cans." It is located in the Central Research Laboratory of American Can Company at Maywood, Illinois.

And, as the name implies, this machine can put enough pressure on can seams for a long enough time to displace

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Measuring creep resistance is just one phase of American Can's entire quality-control operation.

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Why? Because to us the sensible way to serve business, and keep it, is to make sure that our customers get as perfect a can at the millionth unit as at the first.

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No other container protects like the can

Applications of Synthetics

CERTAIN principles are important in applying the three chemical types of surface-active compounds in textile operations:

1. Anionic compounds such as the sodium alkyl sulfates tend to form insoluble salts with heavy metal salts and with complex cations. Conversely cationic auxiliaries such as quaternary ammonium salts are not reactive toward other cationic substances but react readily with anions. Nonionic surface-active compounds such as organic esters and ethers are chemically inert, although many are decomposed by strong alkalis and acids.

2. Anionic auxiliaries are repelled by negatively charged colloids but attracted by positively charged substances. Cationic materials exhibit a reverse effect. Nonionic auxiliaries are inert toward electrolytes.

3. Anionic surface-active agents are often salted out of solution by strong acids and alkalis. Cationic auxiliaries may show far greater stability, and some are stable in the presence of concentrated acids, alkalis, and saline solutions.

Although many of the newer anionic synthetics are resistant to the concentrations of hardness found in ordinary or even unusual industrial water, few will withstand sea water. As a result nonionic detergents are replacing the older types of marine soaps and detergents for washing textiles in sea water. Cationic dispersing agents are finding applications in marine paints and varnishes, fields in which anionic auxiliaries always were poorly adapted. Complex silicofluorides which were unserviceable for moth-proofing wool because of poor penetration,

have been rendered superior moth retardants by addition of cationic agents.

Use with Oil Emulsion

Textile fibers as delivered to the mills are too dry and harsh to convert into yarns and fabrics, a condition corrected by use of lubricating oils. Anionic emulsifying agents are most generally used to disperse these oils. Laboratory tests with stable oil emulsions made with anionic, cationic, and nonionic emulsifiers, have demonstrated that oil exhaustion can be secured with only the cationic type. In fact the conventional anionic agent results in a negative oil absorption. When the price differential between the three types of agents is narrowed, cationic emulsifying agents may assume greater industrial importance.

Detergency

Detergents may be either anionic or nonionic, but not cationic. Almost all textiles are anionic and in consequence absorb cationic compounds from solution. As a result cationic agents even though so balanced within the molecule as to secure detergency, are absorbed from solution by textiles and are unable to clean except very special conditions.

Wool in solutions more acid than its isoelectric point becomes cationic. In spite of this, very little success has resulted from attempts to clean wool with cationic auxiliaries. Some success has been attained by acid scouring with nonionics, although these detergents were not as effective as expected. Nonionics have however, become important in the washing of prints.

Dyeing

Only anionic surface-active compounds are ordinarily employed as dyeing auxiliaries. They serve as penetration and dispersing agents to help maintain a clean bath free from insoluble matter and conglomerates which might prevent the development of bright shades. Some nonionics are finding application in a one-bath method of simultaneously scouring and dyeing woolen yarns and fabrics.

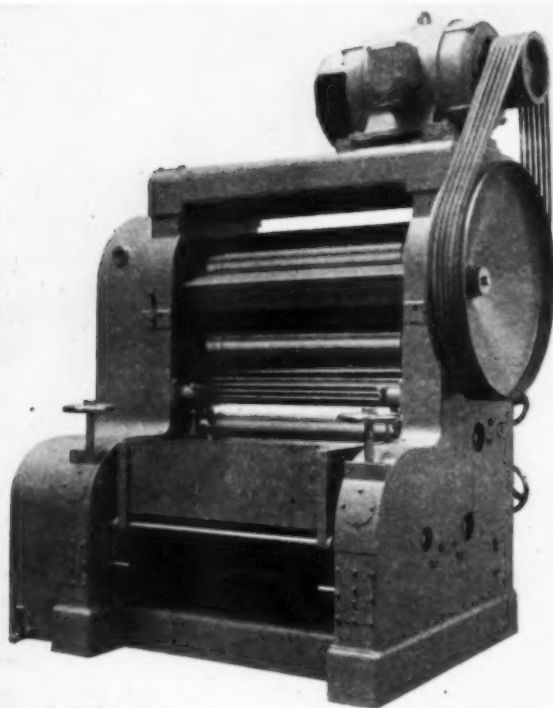
Application of water-proofing agents and other treating compounds depends on the same principles discussed above as to the fundamental character of the surface-active agents. H. H. Mosher, *Am. Dyestuff Reporter*, 35, P168-73 (1946).

Revise Spec. P-S-600

The Federal Specifications Board has recently issued the tentative text of a proposed revision of Federal Specification P-S-600 for low titer soap, and has called for comments from the trade as to possible necessity for changes in the proposed new specification. No change is made in types or classes from the former draft, but rather sweeping changes have been suggested in detail requirements, including the provision that, unless otherwise specified, soap of type II shall contain not less than 0.10 per cent of an organic oxidation inhibitor.

For type I soap the maximum on matter volatile at 105°C has been dropped from 35 to 32 per cent. A slightly greater tolerance would be permitted on unsaponified matter,—1.5 per cent rather than the present figure of 1 per cent. Titer of the mixed fatty acids prepared from the soap

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Bentonite is widely used as a detergent in soaps and soap powders, as a base for hand soaps, in polishes as a suspending medium for abrasives, as modifying agent in alkali cleaners and direct in laundering operations.

"THE COLLOIDAL CLAY OF INNUMERABLE USES"

Innumerable users in many industries employ Bentonite for a variety of purposes, either in dry form, as an aqueous dispersion in the colloidal phase (gel form) or with other constituents for the obtainment of one or more of the general objectives here partially listed: Effective detergency; emulsification; suspension; absorption or adsorption medium; non-oily lubrication; uniformity of dispersion; mineral adhesive; filling or coating of paper, rubber, etc.; thickening agent; sedimentation clarification; water impedance; catalyst or catalyst carrier; plasticizing; zeolitic water softening; building of soaps or alkalies; carrier or adhesive for insecticides, fungicides or antiseptics.

TECHNICAL SERVICE

Schundler Technical Service is available. We suggest you inform us of problems in which a Bentonite product may be the solution. We maintain a well equipped research laboratory and a complete technically trained staff.

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has been changed, the maximum being dropped to 22°C from the present figure of 28°C. Maximum on iodine number (Wijs) would be lowered from the present figure of 105.0 to 90.0. Minimum unsaponified matter would be raised to 64 per cent from the present figure of 61 per cent.

Additional changes are specified in Type II. A provision has been added, setting a minimum content of 4 per cent on water soluble sodium silicate. Another addition to the detail requirements is a maximum of 10 parts per million on copper. Maximum on sum of free alkali or free acid, total matter insoluble in alcohol and sodium chloride, has been raised from 4 per cent to 9 per cent. Tolerance on maximum free alkali is set at 0.4 per cent in the new tentative draft as against 0.2 per cent in the present specification. Maximum on unsaponified matter is changed from 1 per cent to 1.5 per cent and minimum on anhydrous soap is dropped from 87 to 81 per cent. The same changes are made on titer and iodine number as for Class I, dropping the former to 22°C and the latter to 90.0.

Copies of the proposed new specification may be obtained by addressing F. W. Smither, chairman Technical Committee on Detergents, Federal Specifications Board, Washington, 25, D. C.

Dioxolane Polymers

1,3-Dioxolane is prepared by the reaction of ethylene oxide with formaldehyde in the presence of acidic catalysts. Polymers of 1,3-dioxolane are prepared by continuing the reaction beyond the formation of the simple compound under conditions where as much as possible of the water is removed. Derivatives of the reaction products of ethylene oxide and formaldehyde are prepared by reaction with alcohols, acids, amines, esters and other organic compounds containing active hydrogen. Such derivatives with long-chain acids or alcohols are useful as nonionic detergents and surface-active agents. W. F. Gresham, to E. I. du Pont de Nemours & Co. U. S. Patent No. 2,395,265.

Sea Water Soap

A soap adapted for use in hard water, sea water, and acid aqueous solutions, comprises a water-soluble soap and a mixture of alkyl derivatives of an aromatic sulfonate. The latter contain at most 2 benzene nuclei. The alkyl groups are derived from a poly-component nonaromatic hydrocarbon mixture of which at least 80 per cent boils between 210° and 275°C. and over a maximum of 55°C. The mixture of alkyl derivatives and soap is present in ratios varying from 5 to 100 parts of alkyl derivatives to 100 parts by weight of soap. L. H. Flett, to Allied Chem. & Dye Corp. Canadian Patent No. 433,360.

Fatty Acid Separation

A commercial plant is described for the continuous separation of 30 tons of mixed fatty acids daily. Separation of the mixed fatty acids is controlled to produce several grades and qualities of stearic and oleic acids. The process, known as the Emersol process, operates on the principle of controlled crystallization of solid fatty acids from a polar solvent such as methanol, and removal of the solid acids by filtration. A sharp separation is obtained in a single stage. The solvent is distilled from the stearic and oleic acids, then condensed and recycled for re-use. Two plants of this capacity are now in operation by Emery Industries, Inc. *Oil & Soap* 23, 146-50 (1946).

Treated Cotton Fabrics

The effectiveness against attack both by termites and by microorganisms, of 16 finishing treatments for cotton fabric, was determined. In general, treatments that protect fabric from attack by termites also make it resistant to microorganisms including fungi. However, some effective mildew-resistant treatments allowed slight attack by termites, and two allowed heavy attack.

The following treatments gave excellent protection against attack by both agencies: Cuprammonium hydroxide, copper oleate, copper naph-

thenate plus copper oleate, mercuric chloride plus 8-hydroxyquinoline, and copper naphthenate. R. A. St. George and J. S. Furry. *Am. Dyestuff Reporter*, 35, 207-10 (1946).

Fatty Acid Determination

A rapid colorimetric method for determination of fatty acids and esters is based on the formation of hydroxamic acid from fatty esters by the use of hydroxylamine hydrochloride in an alkaline solution. On the addition of an acidified solution of alcoholic ferric perchlorate, a stable red colored complex of ferric hydroxamate is formed, proportional in intensity to the esters present. Fatty acids are first quantitatively methylated in an anhydrous ether solution with diazomethane or thionyl chloride. The results are in good agreement with a gravimetric determination. U. T. Hill. *Ind. Eng. Chem., Anal. Ed* 83, 317 (1946).

Glycerine Recovery

Glycerine is recovered from aqueous solutions derived from the fermentation of carbohydrate-containing materials by treating the solution with a solvent for glycerine and heating so as to distill off the water and leave a substantial water-free solution of glycerine in the solvent. E. H. Brittain, W. P. Joshua, and J. M. Whitmarsh, to The Distillers Co. Ltd. Canadian Patent No. 433,803.

Methyl Glycerol

α -Methyl glycerol is produced by oxidizing crotonaldehyde in a nonalkaline medium to α -methyl glyceraldehyde and then catalytically hydrogenating the glyceraldehyde to α -methyl glycerol. H. P. Staudinger and K. H. W. Tuerck, to The Distillers Co. Ltd. Canadian Patent No. 433,404.

Fat Stabilizer

N,N'-dicyclohexyl-*para*-phenylene diamine and similar compounds are useful as antioxidants and stabilizers for fats and oils. E. W. Cook and W. D. Thomas, Jr., to Am. Cyanamid Co. U. S. Patent No. 2,393,889.

Mercol ST

Synthetic Detergent Bead

Light Specific Gravity (.1)

Foaming Quality—Excellent

Detergent Quality—Excellent

Odorless Non-hygroscopic

Compatible with alkali and acid

Physically: White Free-flowing beads

Chemically: A Benzine sulfonate

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Light, dry, uniform—made by spray tower process

42°-95% Pure Tallow Soap Beads

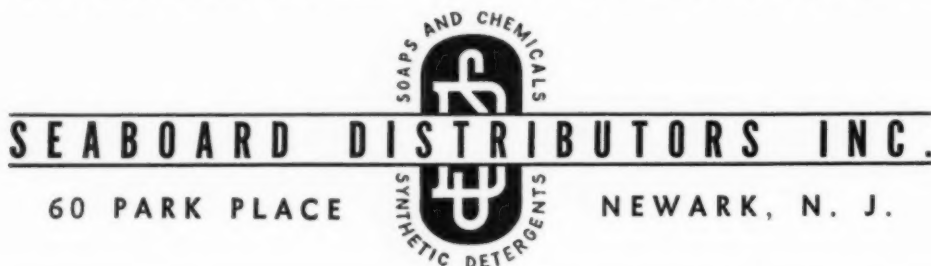
32°-60% Built Soap Beads

30°-95% Vegetable Oil Soap Beads

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By DR. E. G. THOMSEN, PH.D.

THE current industrial discontent which is manifesting itself in such a widespread epidemic of strikes is not limited to employer-employee relationships. The desirability of obtaining advantages in wages and working conditions penetrates to inter-employee or inter-department relationships as well. We refer to the jealousy and friction often existing between office and factory help, between sales employees and factory or laboratory executives, and between the office and sales staff. The advantages which union labor has obtained through favorable labor legislation is also causing a considerable amount of discontent among unorganized workers. Wise employers are not discounting this situation and are planning means to remedy it before they have additional serious labor difficulties on their hands in this direction.

To a great extent it was the fault of business heads that it was so easy to organize their factory help. Insufficient attention was paid to the temper of factory employees in the pre-Wagner Act period. Much of the general attitude by employers was "take your job under the conditions prescribed by us or leave it. Others will step in if you don't want to work under our terms. We dictate the wages, hours and the working conditions."

During the writer's working career most of his relationships were in the production or factory end of business. Lasting impressions persist from this experience. For years we had to watch other departments and keep patient while seeing them enjoy advantages and privileges not given our department. Office and sales employees work-



ed shorter hours, were paid more than factory help, were not docked for holidays and received vacations with pay. It was very difficult for our factory employees to fathom why office help who, in most cases were non-producers and were classified as overhead, received these favors when they did not even work as hard nor as steadily as factory personnel. It grew at times into a deep seated canker that left an ill feeling toward the organization. This condition, which was general to most organizations in those days, has contributed forcibly to provisions in union contracts which now insist upon these same benefits for factory help. If this situation had been recognized as unfair, and adjusted voluntarily by management, insistence upon additional privileges might not be as emphatic today. Labor has obtained its new rights through organizations. It is unorganized office personnel who are now at a disadvantage.

Under these conditions office employees now feel resentment. Factory help sort of looks down upon the

office workers and the feeling of jealousy is on the other side. No longer do factory help envy the office staff. They are the privileged employees and know it. The office worker, on the other hand, believes he has reason for ill feeling. He may be doing more desirable work, but his wage is less. He must keep up a better appearance and does not have the feeling of security a union member has if he complains of working conditions. To a degree the same is true of the scientifically trained laboratory personnel. Many a laboratory employee who has spent years in obtaining a college education finds his earning power less than that of a factory mechanic or even a day laborer. The knowledge of white collar workers and laboratory employees that they are not receiving pay increases equal to those given union men is causing considerable discontent during this period of unrest.

We had these conditions impressed upon us quite vividly, recently. A trip took us into two plants. One was a small non-union plant, the other was a large unionized plant. Out of curiosity we investigated the relationships that existed between office, factory and laboratory. In each case our findings were interesting.

The small plant still operated under the same conditions which existed over a decade ago, or very nearly the same. There was no factory union and the factory hours were longer by at least an hour a day than the office hours, since the operations were entirely intrastate. The wages for office clerks were higher than those paid factory girls. The office help received vacation with pay, and all employees were paid for six holidays per year. While there was little overtime, only supper money was provided when night work was pursued in the office or factory. Up to one week was given with pay for a confirmable sick leave. As is the case in most small plants, there was a cordial relationship between factory and office heads. The two chemists in the laboratory worked according to factory regulations, but were given ten days vacation with pay.

The main peeve of the factory employees was the question of bonus.

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They saw no reason why they should work longer hours than the office help, whose pay was higher than theirs. The fact that they were being paid on an hourly basis and the office force on a weekly basis did not enter into their calculations. Then, too, there was some feeling among the factory girls that the office had better dressing rooms than they, and that office employees could keep their clothes cleaner and doll up more. The question of paid vacations also caused discontent among factory help and most of them thought they should have vacations the same as the office staff.

The attitude in the large plant was quite different. The office help was more or less dissatisfied, especially with their pay, but did not know what to do about it. Every year they saw factory wages mounting more rapidly than theirs. Even though they had received increases, the increases were not comparable with these given factory workers. Office hours were but thirty minutes per week day shorter than the factory's but they worked five and a half days while the plant worked five days. True they were paid time and a half over the forty hour period but this was for a mere two hours per week and had come to be looked upon as regular pay. The factory also had rest periods, a grievance committee who were constantly getting better working conditions and sort of looked down on office clerks because they felt that with the union behind them they could tell the employer and bosses where to get off. One could sense that there was a disgruntled feeling among the office help. The laboratory force too were none too satisfied. They felt that their contributions were not being properly rewarded. True, they too had gotten raises but on the percentage basis they were not equal to the factory laborer's. As has been already stated, certain skilled factory help received considerably more in wages than some of the laboratory workers got as a salary. This did not sit well. Again they did not know what to do about it and most of them were too timid to take their peevishness to management.

These conditions are undoubtedly multiplied many times in hun-

dreds of plants. Employers in most cases have so many problems upon their hands that they let these matters ride in the hope that the conditions will right themselves. In certain cases they assume the same attitude towards office and factory help that they took toward factory labor in the past. They begrudge increasing the expense of running an office and laboratory and strive to keep wages down. This is a mistake. The very reason it was easy for unions to organize so many plants was due to the peevishness and resentment of factory employees through whom organizers gained their hold in plants whose owners felt smug and considered that they could hold their employees in check because presumably they were giving them fair treatment. Many suffered a rude awakening.

Right now union organizers are still busy organizing non-organized labor. In most cases office help is not organized. Just as soon as the unions finish their present work they will turn to this new field to increase their membership. They have already made considerable progress in allied fields like teachers and store clerks. Wise employers are paying attention to the attitude of scientific and office personnel toward the employer. These people can hardly be expected to continue to stand idle and watch their living expenses increase faster than their salaries. Most of them are not as easily susceptible to unionization as factory help. Yet when it comes to a question of dollars and cents their cupidity will overcome their aloofness in this respect. Prudent employers realize this condition, and are not forgetting to keep these employees satisfied. It often hurts to do so, but will pay in the long run in preventing future labor troubles.

Sodium Chlorite Fat Bleaching

Mathieson Alkali Works, New York, describe the use of sodium chlorite for bleaching fats and greases in a recent bulletin. During the present shortage of fats, soap makers will find it necessary to turn to lower grade fats to make white soaps. Fats usually used for darker crude soap now find use in better grades. The new process developed by this company has been in successful operation for over a year

It consists of using about two pounds of sodium chlorite per ton of fat with either sulfuric acid or chlorine under carefully chemically controlled conditions. Kettles ordinarily used for refining greases or fats may be used. The process takes about one and a half hours to carry out the operation. There is not as great a loss in the yield of bleached fat as with the often pursued Fullers earth and activated charcoal bleaching and filtering methods. The fats suffer from no chemical deterioration and the odor as well as the color is improved. As examples of color improvement, tallow was bleached from 13-15 F.A.C. to 3-5 F.A.C. with no reversion and a brown grease from 41 F.A.C. to 13-15 F.A.C. color scale or number, by this chlorite method.

Condensate Refiner and Filter

The Blackburn-Smith Manufacturing Co., Hoboken, N. J. have sent us their catalog which illustrates a pressure leaf type filter for clarifying condensates and their water filter and grease extractor. The pressure filter breaks the most stable emulsions and removes oil from the condensate down to 0.01 ppm. easily and economically. The water filter is designed to remove mechanically suspended foreign matter from water for boilers, processing water for industrial usage and water supplies for laboratories, laundries, chemical plants and food industries.

"Soap in Industry"

A recently published work by G. Leffingwell and M. A. Lesser entitled "Soap in Industry" has come to our desk. The authors readily admit that the book is intended as an indicative rather than an exhaustive survey of the industrial uses of soluble soaps. It is to be presumed then that the object is merely to stimulate one's mind or to give hints of different ways in which potash and soda soap are used industrially. This is exactly what the work does. Various formulae are given for 22 different branches of industry. A closer observation of these formulae indicates that in many cases they are not very practicable and evidently have been picked out at random from the literature which really in most cases does not include the most suitable receipts for industrial



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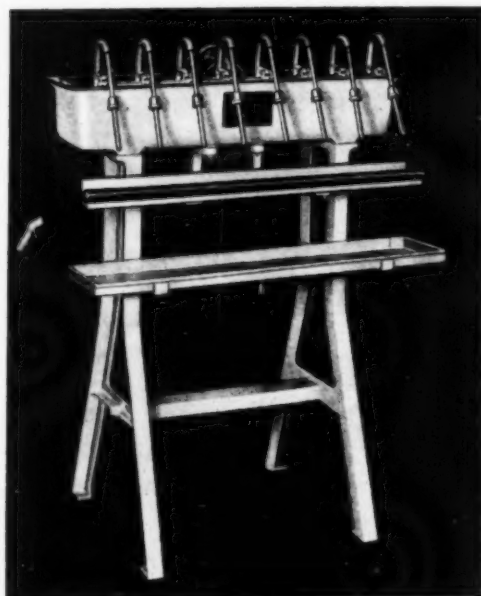
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purposes. It is true that the formulations given are referred to their original sources in the extensive bibliography, but even these references do not justify some of the information given in an up-to-date book. It is unfortunate that the authors have in so many cases given but very scant information regarding the use of soaps in the twenty odd industries they seek to cover in 177 pages or less of text. They have succeeded only in making the book "indicative" of the use of soluble soaps in industry. The value of the work is very questionable in view of the lack of more thoroughness in covering the subject matter.★★

Hercules Products Booklet

A new booklet listing Hercules chemicals and industrial explosives, and more than fifty industries which utilize these products, is now available from Hercules Powder Co., Wilmington. For easy reference, the products are first indexed according to various industries in which the chemicals and explosives are used and then according to chemical families. Applications for Hercules chemicals in plastics, paints, textiles, film, adhesives, paper, rubber, and insecticides are given. Chemicals discussed in the booklet include the cellulose family, rosin family, synthetic resins, terpene solvents and chemicals, chlorinated products, explosives, and special products.

Two New C. & C. Booklets

A new booklet, "Anhydrides," offers charts, data, and discussion on the properties and uses of a number of anhydrides. A new booklet, "Columbia Activated Carbon," describes specifications and applications of several types and grades of activated carbon developed for special uses. Copies of these booklets may be obtained from Carbide and Carbon Chemicals Corporation, 30 East 42nd St., New York 17, N. Y.

Pennsalt Detergent Leaflet

A four-page leaflet describing how its detergent, "Pensal-B," can eliminate or materially reduce soap use in laundries has been issued by the Pennsylvania Salt Manufacturing Co.,

Philadelphia. The leaflet, entitled "The New Development in Break Powders," may be obtained by writing to the Company's main offices, 1,000 Widener Building, Philadelphia 7, Pa.

First Machinery Moves

First Machinery Corp., New York, dealers in used equipment, have moved to new and more modern quarters at 157 Hudson St. Forced to vacate previous premises at 819 East 9th St. to make way for a model housing project, the company selected its new location near the Holland Tunnel entrance in a building affording 60,000 square feet of space for equipment display. First Machinery Corp. will introduce an expanded line of new equipment at the Chemical Show scheduled for the Chicago Coliseum in September. The line will include mixers, tanks, filling machinery, stainless steel kettles, capping machinery, conveyors, etc.

Offers Distillation Service

Truland Chemical & Engineering Co., Union, N. J., announces the completion of its expanded facilities which will include a service for the recovery of a wide variety of liquid mixtures where simple distillation or complex techniques such as azeotropic, extractive or high vacuum distillation are required. In addition, extraction operations are performed. The company does this work for its own account or as a service to others on a contract basis. A staff of chemists and engineers is available for consultation, process design, research and development work, specializing in the fields of distillation, extraction and other recovery operations.

New Pennsalt Cleaners

Two new products, "Pennsalt Cleaner A-22" for aluminum alloys and "PM-95," an acid base cleaning and descaling compound, have been announced by Pennsylvania Salt Manufacturing Co., Philadelphia. "Pennsalt Cleaner A-22" is a general purpose soak tank cleaner for use on all aluminum alloys. Most common applications are cleaning aluminum before anodiz-

ing, chromodizing, phosphatizing and other pre-painting treatment and before deoxidizing and subsequent spot welding. "Pennsalt PM-95" is a specially prepared cleaning and descaling compound containing additional agents for surface action and inhibition. Suggested uses are general pickling and metal descaling, especially for difficult-to-remove oxides resulting from heat treating or annealing.

Amend Laundry Soap Spec

U. S. Specification P-S-591a covering Ordinary Bar Laundry Soap has been amended April 23, 1946, to allow a wider tolerance for the sum of free alkali or free acid, total matter insoluble in alcohol and sodium chloride. The allowable maximum is now 11 per cent rather than 10 per cent.

German War-time Soap

The Fischer-Tropsch process was applied in Germany during the war for preparing hydrocarbons of predominantly straight-chain character from coal. One of the chemicals resulting, consisted of fatty acids of the type required for soap, made by the catalytic oxidation of the Fischer-Tropsch soft wax, and to a smaller extent of the wax obtained by the hydrogenation of brown coal. The maximum production of such fatty acids was 40,000 tons per year, most of which went into soap. The synthetic soap possessed excellent lathering power but left an unpleasant odor on the skin. Synthetic acids were used in toilet soaps only to the extent of 20-30 per cent of the total fatty-acid content. *The Chem. Age* 14, 308 (1946).

Priorities Discusses Copra

Copra is the topic discussed in the May issue of *Priorities*, external house organ of Prior Chemical Corp., New York. After a brief discussion of how the United States entered into its present relationship with the Philippines, the article describes how copra is grown, harvested and prepared for export. The economics of copra raising and the present condition of the Industry in the Islands are also covered.



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Builders with Synthetics

A study of the effect of builders on synthetic detergents and combinations of synthetic detergents with soap, brings out the following facts: Lather of the synthetic detergent, an alkyl aryl sulfonate, is improved by the addition of electrolytes such as sodium sulfate or magnesium chloride, but a decrease in lathering power results after optimum amounts of electrolyte are added. Lesser amounts of bivalent cations are required for optimum results than for monovalent cations.

The surface- and interfacial tension values are lowered by either neutral or alkaline electrolytes. The greater the valency of the anion, the less the amounts of electrolyte required, but the sooner the optimum values are reached and passed. In other words, anions in increasing order of effectiveness were chloride, sulfate, carbonate, and pyrophosphate. Wetting results in terms of the canvas disc method were improved up to 69 per cent by the addition of electrolyte to the pure synthetic detergent. Sodium sulfate was the electrolyte used.

Soap Determination

A method for the determination of small quantities of fatty acids or their soaps on cotton fiber, yarn, of fabrics involves Soxhlet extraction of the material with ethyl or isopropyl alcohol. The acids and their soaps are then separated from extraneous material by extraction with low-boiling petroleum ether after acidification with hydrochloric acid, and are finally titrated with alcoholic sodium hydroxide solution in the absence of carbon dioxide, with the aid of metacresol purple indicator. C. L. Hoffpauir and J. H. Kettering. *Am. Dyestuff Reporter*, 35, 265-6 (1946).

Murumuru Wax in Soap

A Brazilian vegetable wax or fat is being used in place of other oleaginous products for making soap. The murumuru fruit weighs about 12.5 grams, 46 per cent of it composed of oil-bearing seeds. The amount of oil in the seed is 38-42 per cent. Acids are present in the wax in the following

Detergency is also improved by the addition of electrolyte, sodium sulfate being quite effective but alkaline salts being more effective. The valency of the anion has a marked influence. Combinations of trisodium phosphate and tetrasodium pyrophosphate appeared to have a synergistic action in hard water but their effect is no doubt due in part to their water softening action.

Combinations of soap and alkyl aryl sulfonate were not as effective as either one alone at 0.1 per cent total concentration in soft water. The presence of sodium sulfate tends to reduce the detergency of the soap-synthetic mixtures. Soap-synthetic detergent combinations have been used successfully by the Armed Forces but at high concentrations.

Studies made with added bentonite showed that no general improvement in detergency was attained by addition of bentonite as a caking inhibitor to the sulfate-built detergent. Jay C. Harris. *Oil & Soap* 23, 101-10 (1946).

proportions: caprylic 1.03, capric 1.47, lauric 39.92, myristic 34.55, palmitic 4.26, stearic 2.01, linoleic 0.38, and oleic 10.13. The glycerine content of the fat is 12.9 per cent, and the melting point 33-36° C. *Manufacturing Chemist* 17, 119 (1946).

Capillary-active Agents

Surface-active compounds are obtained by treating 1 mol of *N*-(3-aminobenzene sulfonyl)benzamide with 1 mol of the chloride of oleic acid or of a saturated acid and acetone in an aqueous alkaline solution in the presence of sodium acetate. The condensation reaction is carried out at 2-5°C., the reaction mixture is diluted, neutralized, and heated at 80°C. to bring the reaction to completion. Compounds prepared by this method have considerable detergent and foaming power even when the hydrocarbon part of the molecule is comparatively short. W. Hentrich, H. J. Engelbrecht, and E. Schirm, to The Alien Property Custodian. U. S. Patent No. 2,394,307.

Study of Emulsifying Agents

The drop method was used to determine the interfacial tension of a sulfated fatty alcohol in comparison with glyceryl monostearate. A paraffin oil dyed red with an oil-soluble dye was dropped into a solution of the emulsifying agent being studied. In this manner the effect of added sodium chloride was observed, also the effect of varying concentrations of emulsifying agent.

The results are shown in the table; the higher the drop number, the lower the interfacial tension between oil and solution and the greater the emulsifying power of the agent.

I. Comparison with water of 0.5 % Solutions Av. of 6 detns.

Solution	Drop No.
Water	66
Sulfated fatty alcohol No. 1	116
Sulfated fatty alcohol No. 2	96
Glyceryl monostearate	85

II. Effect of 0.5 % Solution with added NaCl

Sulfated alcohol with 0.5% NaCl	98
Sulfated alcohol with 1% NaCl	107
Glyceryl monostearate with 1% NaCl	110

III. Effect of varying concentrations of Glyceryl Monostearate in %

0% (water only)	64
0.0625	69
0.125	73
0.25	81
0.5	84
0.75	85
1.0	85

IV. Effect of varying concentrations of Glyceryl Monostearate with 1 % NaCl in %

0.125	84
0.5	93
0.75	119
1.0	118

The results show that sodium chloride (NaCl) may be of value in facilitating the emulsification of mineral oil in aqueous media. However, it is necessary to determine the optimum concentration of electrolyte or perhaps more accurately, the optimum ratio of electrolyte to emulsifying agent. If the optimum is exceeded, the emulsifying agent is precipitated, particularly with glyceryl monostearate. A. Carroll, *Manufacturing Chemist* 17, 93-6 (1946).

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PRODUCTS AND PROCESSES

Wall Cleaner

An unstable emulsion for cleaning floors, walls, and ceilings is made by adding a mixture of 40 parts of mineral oil in 7 parts of turpentine and 3 parts of isopropyl alcohol at a temperature of 60-65°C., to 45 parts of an aqueous wax emulsion containing 15 per cent of a natural wax. With continuous stirring, 5 parts of a sulfonated vegetable oil containing 1.5 per cent of a disinfectant such as salicylic acid or sodium benzoate, are added. E. Schwartz. British Patent No. 560,690.

Neutral Detergents

German development of a valuable class of nonacid and nonalkaline detergents for synthetic fibers has been revealed through Allied investigation of the Oxo plant at Ruhrchemie, Oberhausen-Holten, Germany. Detailed discussion of the production processes involved and data on German production of various other chemicals are contained in Report No. 4115, distributed by OPB at 25c per copy.

Detergents from Kerosene

Paraffinic kerosene boiling at 157-278°C. is chlorinated to such an extent that the chlorine absorption corresponds to 110-150 per cent of the amount required for monochlorination. Chlorination is carried out continuously or batchwise at 50-85°C. in the presence of iodine or other catalysts. The chlorinated hydrocarbons are condensed with benzene in the presence of 2-5 per cent aluminum chloride. The amount of benzene used is about twice that of the chlorinated hydrocarbons. After the evolution of hydrochloric acid has ceased, the reaction mixture is heated to 70-90°C. for 1-5 hours. This procedure decreases the amount of unstable chlorine compounds in the condensation product and improves the odor of the detergent obtained by sulfonation of the condensation product. The crude condensation product is fractionated and the fraction boiling at 100-250°C. which represents mono-

alkylated benzene, is sulfonated. L. H. Flett, to Allied Chemical & Dye Corp. U. S. Patent No. 2,394,851.

Glass Cleaner

New detergent compositions especially suitable for cleaning glass or hard polished surfaces consist of 5-20 per cent of 2-methyl-2,4-pentanediol and water to which small amounts such as 5 per cent of isopropyl alcohol may be added together with sulfonated wetting agents such as 0.1 per cent of "Santomerse." Addition of 15 per cent of the active diol alone to water lowered the surface tension to 32.7 dynes per cm. W. C. Gangloff, to The Drackett Co. U. S. Patent No. 2,386,106.

Acid-resistant Detergent

Detergents for use in hard water or in the presence of alkali, acid, or brine are prepared by treating a dihalogenated aliphatic ether with sodium sulfite and acylating the monohalogenated-monosulfonated ether by fusion with the alkali salt of a fatty acid in the presence of water. H. H. Young and K. H. Spitzmueller, to Industrial Patents Corp. U. S. Patent No. 2,394,834.

Copper Soap

A free-flowing powdered copper hydroxy soap is produced by the reaction of an alkali soap, free alkali hydroxide, and a sufficient quantity of an inorganic water-soluble copper salt to react completely with the alkali soap and hydroxide. A. Minich, to Nuodex Products Co., Inc. Canadian Patent No. 433,433.

Dentifrices

A dry stable powder is provided by mixing a perborate such as sodium perborate, and an alcohol such as mannitol, and boric acid. The ingredients of the mixture will react in the presence of the water which is available during normal use of the dentifrice. The mannitol and boric acid will

form a complex which is a stronger acid than boric acid itself, and is therefore an efficient neutralizer. McKesson & Robbins, Inc. British Patent No. 563,943.

Soap from Sperm Oil

Sperm oil having a high fatty alcohol content is heated with anhydrous alkali at approximately 275°C. simultaneously to saponify the fatty acids and to transform the fatty alcohols into soap in a single operation without withdrawing the fatty alcohols from the reaction chamber. The reaction is started out of contact with air and continued in the presence of the superatmospheric pressure of the generated hydrogen. German Schmidt and Carlos Edwards, to Compania Industrial. U. S. Patent No. 2,393,421.

Calcium Hypochlorite

A dry product for use in aqueous solution comprises calcium hypochlorite containing 50 per cent of available chlorine and sodium tetraphosphate in the proportion of 0.5 to 20 per cent of the calcium hypochlorite. J. D. MacMahon, to The Mathieson Alkali Works. Canadian Patent No. 434,733.

Bleaching Agent

In bleaching oils, fats, waxes, and soaps, the material is subjected to the action of an aqueous solution having a pH not less than 7, and containing both an alkali chlorite or alkaline earth chlorite, and an aldehyde. In place of an aldehyde, an alkali metal persulfate may be used. C. A. Hampel, to The Mathieson Alkali Works. Canadian Patents 434,495 and 434,496.

Textile Fungicide

A versatile, efficient and long-lasting fungicide for all kinds of textiles is copper-8-hydroxyquinoline, marketed under the name of "Milmer" by the Monsanto Chemical Co., St. Louis. It is said to be free from skin irritation and toxicity to humans, and is suggested for treating shoe linings, upholstery materials, awnings, bags, sporting equipment, etc. It should be applied in the textile mill rather than in the home.

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DEVOTION

Sweetest the strain — when in the Song
the singer has been lost

*We humbly submit this FRAGRANCE
for the delight and inspiration of the
Understanding in Heart.*

SPARHAWK CO.

SPARKILL, N. Y.

Be not like the stream that brawls
Loud with shallow waterfalls,
But in quiet self control
Link together Soul with Soul
Longfellow

When from the censor clouds of
fragrance roll
And swelling organs lift the rising
soul
One thought of thee puts all the
pomp to flight
Priests, tapers, temples swim
before my sight.
Alexander Pope

Conducted by

**Lancaster, Allwine &
Rommel**

**Registered Attorneys
PATENT AND TRADE MARK CAUSES
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Washington, D. C.**

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine & Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,399,829, Metallic Germicidal Solution and Method of Making Same, patented May 7, 1946 by Anthony J. Salle, West Los Angeles, and Howard L. Guest, Ocean Park, Calif., assignors of one-half to Leo A. Gunther, Robbins, Calif. The method of increasing the germicidal property of a solution of one of the group consisting of mercuric chloride and stannic chloride, that comprises the step of adding to each gram molecular weight of such metallic compound an equivalent weight of a reducing agent from the group consisting of ferrous sulfate, ferrous chloride, stannous chloride, manganous chloride and manganous sulfate.

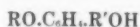
No. 2,400,101, Purification of Unsaponifiable Fractions of Fats or Oils, patented May 14, 1946 by Loran O. Buxton, Newark, N. J., assignor to National Oil Products Co., Harrison, N. J. A process for producing fat-soluble vitamin concentrates from oleaginous vitamin-containing materials which comprises saponifying the oleaginous material to produce a soap mass, extracting the soap mass with a solvent selected from the class consisting of hydrocarbons and halogenated hydrocarbons while maintaining the temperature of the solvent and soap from about 40° C. to just below the boiling point of the solvent and the water content of the soap at such an amount that the soap is slightly soluble in the solvent and separating the warm solvent extract from the warm soap.

No. 2,400,295, Insecticides, patented May 14, 1946 by Karl Folkers, Plainfield, Edward Rogers, Cranford, and Ralph E. Heal, New Brunswick, N. J., assignors to Merck & Co., Rah-

way, N. J. An insecticide and insect-repellent, comprising alkaloids of plants of the genus *Ryania* and a carrier therefor.

No. 2,400,871, Process for Forming Separable Bar of Detergent and Resulting Product, patented May 28, 1946 by John W. Bodman, Winchester, and Fred Forrest Pease, Squantum, Mass., assignors to Lever Brothers Co. A method of treating a detergent selected from the group consisting of soap and non-soap type detergents to facilitate partitioning thereof, which comprises dividing at least a portion of a mass of said detergent along a plane thereof while in a heated plastic to semi-fluid condition, contacting only a portion of at least one of the divided surfaces with a material dissimilar to the detergent being treated and capable of reducing the natural cohesion of the detergent mass, and reuniting said surfaces of said separated portions, and forming the mass into cakes containing said reunited surfaces.

No. 2,400,006, Insect Repellent Compositions, patented May 7, 1946 by Howard A. Jones and Bernard V. Travis, Orlando, Fla., assignors to the United States of America as represented by the Secretary of Agriculture. An insect repellent composition comprising a compound of the general formula



wherein R is an alkyl group and R' is a divalent radical having the general formula C_nH_nN , where n is an integer of at least one, and RO and R'OH are in the ortho position to each other, incorporated in a carrier selected from the group consisting of a vegetable oil, an inert powder, and water.

Pennsalt Appointments

Tom R. Todd has been named divisional sales manager of the Southeastern district for the laundry and dry cleaning division of the Pennsylvania Salt Manufacturing Co., Philadelphia. Mr. Todd, who has been associated with Pennsalt for the past three years in Florida and Georgia, succeeds Don D. Hoffman. Edward E. Ewell, recently returned from the Army where he served four years in charge of a mobile laundry in the Pacific, is temporarily assigned to the Philadelphia office prior to assignment to a territory. W. J. Zimmerman, recently released

after five years of service with the Army, has been named sales service representative for the Dallas, Tex., area, and Edwin J. Petit, also just released after five years in the Army, has been assigned as sales service representative in the South Florida territory.

Chem Show in Chicago

The fourth National Chemical Exposition, timed to fit in with the semi-annual meeting of the American Chemical Society, will be held in Chicago from September 10th to the 14th at the Coliseum. The show is sponsored as heretofore by the Chicago Section of the American Chemical Society. It will include the "Chemical Trail Blazers", exhibit, a popular, educational display introduced the 1944 exposition.

New Plant for Leeds

Leeds Chemical Co., is establishing a new plant in Baltimore where they expect to manufacture most of their products, featuring particularly the "Leeds Homogenized Granules" with "Roccal." The granules have been patented and developed for use with the automatic dishwashing machine. The incorporated material "Roccal" is manufactured by the Winthrop Chemical Co., New York, and has been licensed to Leeds for use in the dishwashing machine compound. S. P. Leeds organizer and founder of the company, was the largest stock holder in the Chalfonte Haddon Hotel, Atlantic City, and was also treasurer for the American Hotel Association for the past 18 years. He has sponsored the company's development of maintenance chemicals for the hotel and institutional trade. Leeds is also a national distributor for Mathieson Alkali's "Mafos" briquets and tablets.

Pepsodent Sales Director

Phil Kalech, formerly sales manager of the Pepsodent division of Lever Bros. Co., Cambridge, has just been named director of sales of the Pepsodent division, the company announced recently. In this new position, Mr. Kalech has complete charge of all Pepsodent sales and sales personnel.



A Leakproof Container that can be depended upon for safety in shipping

INLAND STEEL CONTAINERS

Container No. 594Q is designed for shipping thin liquids. Unusual strength is provided by the five thickness chime made with the double seaming method of attaching head and bottom. The thinnest of liquids can be safely shipped in this drum type container that stays leakproof even with rough handling. Three styles of openings can be furnished—



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**THE "SIMON"
3-ROLL TOILET
SOAP MILL**

HENRY SIMON LTD.

SOAP MACHINERY SPECIALISTS
CHEADLE HEATH • STOCKPORT, ENGLAND

Non-soap Detergent

A new composition for use as a nonsoap detergent comprises a sulfonated organic compound having an inorganic sulfur-containing radical bound to an aliphatic carbon atom. The pH in aqueous solution is 7.0. A water-soluble inorganic phosphate is present in the proportion of 0.001 per cent to 3 per cent by weight of the sulfonated compound. The mixture gives a clear aqueous solution noncorrosive to iron-containing metals. R. P. McGhie, to Colgate-Palmolive-Peet Co. Canadian Patent No. 434,340.

Applied Spectrophotometry

The use of a spectrophotometric method furnishes a rapid and simple means of studying changes in the double bond systems of fatty acids. It has found application in the studies of the processing of oils, catalytic hydrogenation, routine analytical work, soap and tallow control, and in academic studies concerning the composition of fats. It is especially valuable

where thiocyanometric procedures are not sufficiently sensitive, or in which conjugated as well as nonconjugated constituents occur. B. W. Beadle. *Oil & Soap* 23, 140-5 (1946).

Sorghum Grain Oil

Since sorghum grain has become a commercial source of starch, it was investigated for fat content. This grain contains about 50 times more wax and two-thirds as much oil as corn. The wax has properties similar to carnauba wax and can be removed by extracting the unground grain with hot solvent. Sorghum-grain oil was found to be similar to corn oil in composition and has the following characteristics: unsaponifiable matter 1.88 per cent, acid value 3.14, saponification value 76.7, acetyl value 16.7, and refractive index 1.4718 at 25°C. The mixed fatty acids from the oil contained 36.2 per cent oleic, 49.4 linoleic, 8.3 palmitic, 5.8 stearic, 0.2 myristic, and 0.1 per cent of hexadecenoic acid. F. A. Kummerow. *Oil & Soap* 23, 167-9 (1946).

Speaks on Fire Hazards

Foster Dee Snell, president of the research laboratories in Brooklyn bearing his name, is currently giving a series of talks before fire prevention groups throughout the U. S. On June 3, he spoke before the Fire Marshals' Section of the National Fire Protection Association in Boston; on June 26, he addressed the Michigan Fire College at Ann Arbor; on July 2, in New York, he talked before the National Conservation Bureau and on July 23, he was to speak at a meeting of the International Association of Fire Chiefs in Cleveland.

New Pennsalt Plant

The Pennsylvania Salt Manufacturing Company of Washington has begun construction of a new \$1,000,000 chemical plant on the Willamette River near Portland. Company officials estimated this new unit will be in operation about June 1, 1947. This plant, a subsidiary of Pennsylvania Salt Mfg. Company of Philadelphia, will

FEDERAL All-Plastic SOAP DISPENSER

Transparent . . . strong, long-wearing, light in weight • Stream-line styling for modern eye appeal • Positive agitator prevents packing . . . insures smooth, even flow • Non-clog, thrust-in discharge valve easily taken apart for cleaning • Heavy brackets for direct mounting to wall or pipe • Wide-opening top for easy filling • Use your own nameplate • Capacity: one quart • Overall size: 8" high x 3 1/4" x 3 1/2" • Fully guaranteed.

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LECITHIN FOR IMPROVED SOAPS

Lowers surface tension

Improves foaming qualities

Imparts soft, velvety texture

Can be used in liquid soap without danger of discoloration or turbidity

Only 1% to 2% required

Rowag Lecithin is of highest purity and is characterized by its light color and crystal-clear appearance—plus freedom from fishy odor. Available in light (liquid) or heavy consistency.

Write for samples and further information.

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For MANUFACTURERS Of SOAP AND CHEMICALS

Makers of soap and many types of industrial and domestic chemicals will find Jacksonville advantageously situated for serving their rapidly growing postwar markets.

LOCATION—Southeastern corner of the United States, strategically located in relation to raw materials, and for rapid, economical distribution to the increasingly important Industrial Southeast, interior markets, Gulf and Pacific coasts, South American and world ports.

LABOR—Ample supply of skilled and unskilled labor, largely native born, cooperative and easily taught. Many workers have special skills acquired through Jacksonville's large volume of war industry.

DISTRIBUTION FACILITIES—A major Atlantic port and highway center, served by four trunkline railroads, and intracoastal Barge Canal providing a sheltered waterway from New Jersey to Miami. Three major airlines, and numerous bus and truck lines.

CLIMATE—Ideal year-round climate permits great saving in plant construction, heating and maintenance, and guarantees more working days per year. Living is less costly and more pleasant because of equable year-round weather.

MARKET—Jacksonville's non-competitive distribution area embraces a population of 3,420,770 with an effective buying income of \$2,626,291,000. The local wholesale trade area included a population of 1,194,891 with an effective buying income of \$1,045,792,000.

A specific industrial and market survey will be prepared at your request. Write us and outline your needs. Correspondence will be strictly confidential.

Dept. D., Industrial Division
Chamber of Commerce



Jacksonville FLORIDA

Tallow Sales at 12¼c

Sales of tallow in large quantities to soap manufacturers were reported on July 10 at 12¼c per pound as against the previous OPA ceiling of 8¾c. Deliveries of tallow yet to be made, but which cover sales made prior to the end of the ceiling price period, will be made at the market ruling at delivery time, whether it be 12½c or higher, according to a Chicago report. With open sales at the higher prices, this means that price restrictions are not only off tallow, but that sellers and buyers are dealing on the basis of an open market. The higher tallow price has caused a scramble in soap prices, some firms withdrawing all quotations temporarily and others noting that deliveries hereafter will be made at prices in line with higher tallow costs. The opinion as obtained as this publication closed for the press is that all soap prices will be higher.

produce liquid chlorine, liquid caustic soda, sodium chlorate, potassium chlorate and sodium hypochlorite. The new unit, which is adjacent to the Company's present Portland facilities, will employ approximately 50 persons.

F. A. Evans Dies

Francis Algernon Evans, 67, a vice president and treasurer of Philadelphia Quartz Co., died June 6, at his home, in the Germantown section of Philadelphia, after a long illness.

Diamond Alkali Plant

Diamond Alkali Co., Pittsburgh, has received the approval of the Civilian Housing Administration to construct a \$5,750,000 electro-chemical plant at Houston, Texas, for the manufacture of chlorine, caustic soda, and muriatic acid. The new plant will include eight buildings and cover about 40 acres. Construction will begin in about 60 days. The new plant will initially employ 200 persons. The company recently announced plans for

a \$400,000 Chicago plant and warehouse, construction on which is scheduled to start next month.

S. R. Clement Advanced

Sam R. Clement, assistant general branch manager of the Birmingham sales district of Monsanto Chemical Co., has been named assistant general manager of sales of the phosphate division at St. Louis, the company announced July 1. A native of Atlanta, Clement was graduated from the Georgia School of Technology and served as Monsanto's sales district position. He was Atlanta salesman for Swann Chemical Co. from 1931 to 1935, when the company was acquired by Monsanto.

Robt. Smith Joins Trask

Robert P. Smith, just out of the Navy, has joined Arthur C. Trask Co., Chicago. He is a graduate of Purdue University and was formerly employed in the laboratory of Armour and Co., Chicago.

Cowles DETERGENT SILICATES

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DRYMET*

(Sodium Metasilicate—Anhydrous)
GRANULAR OR FINES

CRYSTAMET*

(Sodium Metasilicate—Pentahydrate)
REGULAR GRIND

DRYORTH*

(Sodium Orthosilicate—Technically
Anhydrous)
REGULAR GRIND DUSTLESS

DRYSEQ*

(Sodium Sesquisilicate—Technically
Anhydrous Equivalent)
REGULAR GRIND DUSTLESS

Solvent Removal

Volatile hydrocarbon solvents are removed by steam distillation from solutions of synthetic detergents by means of a process which inhibits foaming of the solution. The aqueous detergent solution at a temperature of 60-70°C., and containing about 5 per cent of naphtha, is passed counter-currently down a column packed with ceramic rings, while steam is passed upward through the column. The naphtha is removed by steam distillation, yielding a detergent solution at the base of the column with less than 0.3 per cent of hydrocarbons. The concentration of naphtha at the top of the column must be maintained above the foam-breaking concentration. The detergent consists of a surface-active sulfonation product containing sulfonated ketones, amines, and sulfamates, and water-soluble inorganic salts. W. A. Fessler, to The Solvay Process Co. U. S. Patent No. 2,381,658.

Ease of Hydrogenation

From the analysis of several series of hydrogenated cottonseed, soybean, and linseed oils, estimates were made of the relative readiness of hydrogenation of oleic, isooleic, linoleic, and linolenic acids. Under selective conditions of hydrogenation, the relative reactivities of the unsaturated fatty acids towards hydrogen may be represented approximately by the following whole numbers; oleic acid 1, isooleic acid 1, isolinoleic acid 3, linoleic acid 20, and linolenic acid 40. A. F. Baley and G. S. Fisher. *Oil & Soap* 23, 14-18 (1946).

Hydrogenated Tall Oil

Selective hydrogenation of tall oil is obtained by control of temperature conditions. Treatment of the fatty fraction alone is obtained by hydrogenating tall oil at an optimum pressure of 600 pounds per square inch and at a low temperature, that is 50-135°C. At 50-70° polyolefinic acids are hydrogenated to monoolefinic acids, essentially oleic acid or its isomers. For saturation to stearic acid, the temperature is raised to

80-90° but not over 135°. The rosin acids are hydrogenated at 140° and the unsaponifiable fraction at 155-165° and above. Prior removal of anticatalysts and purification are not necessary except where highly refined products are desired. J. A. V. Turck, Jr., and John Ross, to Colgate-Palmolive-Peet Co. U. S. Patent 2,389,284.

Hydrogenation Study

The course of reaction during the hydrogenation of an oil is extremely complex, not only because of the complex structure of the oil molecules, but also because of the varying rates of reaction of the individual fatty acid glycerides and the formation of new fatty acids that have not been identified in the natural oil. The catalyst remaining the same, the reaction which takes place at any particular instant depends on a number of factors,—temperature, pressure, concentration of the catalyst, relative proportion of the various fatty-acid glyceride molecules, and to a large extent on the grouping of the fatty acids in the individual molecules.

The reaction of a molecule at the catalyst surface is preceded by two stages, attraction and activation. The attraction depends on the total dipole moment of the molecule and the activation on the dipole moment of the individual radicals in the molecule. The reaction does not follow the law of mass action, since the diffusional velocity is not the only factor governing the reaction. Increase of temperature results in the formation of larger quantities of iso-oleic acid since more active points are developed, and also the activity of the existing points is increased. K. S. Natarajan. *Indian Soap J.* 11, 134-7 (1945).

Glycerol Determination

In a method for the determination of glycerol, acetylation is performed with a reagent consisting of acetic anhydride in pyridine. The proposed procedure is simpler, more rapid, and more accurate than the conventional acetin method. W. D. Pohle and V. C. Mehlenbacher. *Oil & Soap* 23, 48-50 (1946).

New Self-service Laundry

A new national self-service laundry plan, where homemakers can wash, dry and iron their clothes, has been announced by Automatic Laundry Distributors, Inc., Mansfield, Ohio. Plans for the new service call for automatic washers, clothes dryers, and electric ironers in fluorescent-lighted rooms, a lounge, and a playroom where children can stay.

The first of these self-service laundries, called the Laundromat-Equipped Half-Hour Laundry, was opened in Mansfield last Fall, and is equipped with 30 Laundromat automatic washers. Westinghouse clothes dryers and ironers will be added later. The facilities at this self-service laundry are said to have been in use full time since the opening day. It has not only relieved a serious laundry problem in the city, but has also given the women who use the service a new conception of how easy wash day can be with the best modern equipment. After the dryers are added, users will no longer be dependent on the weather for a good wash day.

In practice, a woman drives up to the new establishment, leaves her car in the parking lot provided, takes her laundry in and has it weighed. Her only job is to load the machine, put in the necessary soap, which is furnished, set a dial for the type of clothes being laundered, and turn on a starting switch. Thirty minutes later her clothes are washed and damp-dried at a cost of 25 cents a Laundromat load. The patron is assigned as many machines as she needs to complete her entire washing at one time. All washings are scheduled in advance.

The new dryer is so designed that flat pieces such as face and bath towels come out wrinkle-free and require no ironing. Ironers will be installed as soon as available. *Rayon Textile Mo.* 27, No. 11, 76 (1945).

Dietrich Heads Hood Chem.

Kenneth P. Dietrich, former manager of merchandise and specialty sales for Diamond Alkali Co., in Chicago, has been elected president of Hood Chemical Co., New York.

SANITARY PRODUCTS

A SECTION OF SOAP

GOVERNMENT price control is a dead duck. This appears to be the feeling in Washington irrespective of what happens over the next month. Even though substitute legislation were passed by Congress, black market operations have become so widespread that they had made price control a farce even before the expiration of OPA. For a few months, there may be considerable confusion in sales and prices. Some products may skyrocket. But out of the smoke of confusion, we should within a few months settle down to something akin to normal honest open dealings.

Where prices have heretofore been too low to cover costs, this stifling effect on production has been removed. Restricted outputs should now expand to help fill long needed wants. There will be those who will jack prices for all the traffic will bear. Others will think more soberly of their future position. Refusal to buy at excessive prices is the only answer to the chiseler. But with supply and demand back in the saddle, competition will soon again be more than just a word in the dictionary.

MARKETING of household insecticides this year is meeting new problems in the small package field. With each manufacturer putting out two or more types of insect spray, the average consumer has become slightly confused in spite of detailed explanatory advertising and labels. Even though a simple matter, many consumers and plenty of dealers as well do not seem to get the idea of the basic difference between a space spray and a residual spray. Furthermore, many people will buy only one bug killer. They cannot be bothered with one product for this purpose and one for

another. Their desire is to enter a store and buy a can of insect spray that can be used against all bugs at all times and under all conditions.

From initial indications, we have a feeling that the trend next year in the small package insecticide field,—but not in bulk institutional and industrial business,—will be back toward the single "all-purpose" spray. From what we have seen, the public will not bother to learn about too many products, and does not like to buy two kinds of insect spray at the same time. For the average housewife, bug killing must be kept simplified.

SOME time ago, the Proprietary Association issued a bulletin urging its members to check over their advertising claims. The bulletin stated in part: "... manufacturers and advertising agencies should make every effort to remove all ambiguity and trick phrases from their advertising copy. It is much better to clean your own house than to have the Federal Government step further into the picture."

This is mighty good advice to be recalled at this time, especially to some manufacturers of deodorants, cleansers, insecticides and allied products. The debris left by the war is gradually being cleared from the decks in Washington. Completion of this clean-up job will herald, according to several observers, a broadening in the activities of the Federal Trade Commission, the Department of Justice, et al, in the realm of business and industry.

Bad advertising parades its faults for all to see or hear,—and extends an unwitting invitation to these government agencies to "step further into the picture." The time to clean house is in advance,—not after the shooting starts.

NAIDM MEETS...

32nd Mid-year Meeting at French Lick, Ind., June 17, 18, and 19.hears reports on toxicity of DDTmarketing of aerosols discussed.FDA method called unsatisfactory for evaluating quaternary ammonium disinfectants.USDA is requested to develop more adequate germicide test

THE thirty-second mid-year meeting of the National Association of Insecticide and Disinfectant Manufacturers was held at French Lick, Indiana, June 17, 18 and 19, with an attendance of approximately 400. Of particular interest on the program were several papers dealing with toxicity reports on DDT and another set covering the testing of quaternary ammonium disinfectants. A number of the complete addresses from the meeting appear in the following pages, and other talks will appear in subsequent issues.

The morning session on June 17 opened with the reports of the president, N. J. Gothard, Sinclair Refining Co., and the secretary, H. W. Hamilton, Koppers Co., White Tar Division, whose addresses appeared in full in the June issue of *Soap and Sanitary Chemicals*. Next on the program was a report on "Aerosol Marketing" by R. E. Ditsler, Westinghouse Electric & Mfg. Co. (See pg. 131 for full text). Dr. J. L. Svirbely, Industrial Hygiene Research Laboratory, U. S. Public Health Service, Bethesda, Md., also spoke at this session on "Appraisal and Potential Danger of Petroleum Solvents With Special Reference to Particle Size."

Dr. Svirbely pointed out that the increased supply of certain hydrocarbon mixtures, formed during the production of high octane gasoline has made such materials available at a low cost. The physico-chemical properties of these mixtures suggested their

use as solvents for DDT and other insecticides. However, there was little information concerning the toxicity and potential dangers of such solvents in the form of mists. The effect of some of these solvents on the human skin and the toxic effects observed in laboratory animals exposed to a fine dispersion of these solvents in air were studied. The toxicity of the six solvents, obtained from different manufacturers, was investigated and compared with that of "Deo-Base," a material which has been used safely for many years in insecticidal sprays. The results of the study do not warrant recommending any one material as being preferable to any of the others studied for use in insecticidal spray mixtures. The solvents were found to be less irritating than kerosene (coal oil), which has been used in such mixtures. Sufficient toxicological findings were obtained to warrant certain precautions being taken to prevent excessive inhalation exposures by humans to these solvents.

A FEATURE of the first morning session was a question and answer period in the course of which a series

of experts from the industry answered a group of questions which had been submitted in advance by convention attendants. First question dealt with the effective concentration of DDT for use in live stock sprays to give adequate protection against stable flies. The question was answered by Dr. C. R. Cleveland of Standard Oil Co. of Indiana who reported a variation in opinion on this point. The general impression seems to be that from 2 to 5 per cent DDT in stock sprays will kill flies, although it is slow acting and sometimes will seem ineffective when the flies spend but a brief period on the sprayed surface.

Answering a question relative to the efficiency of application of moth-proofing sprays with the customary hand sprayer, Fred Fletcher of Dow Chemical Co. stated that effective application could be expected only when an electric sprayer was used which would deposit a sufficient quantity of the material to do a thorough job. Dealing further with the subject of spraying, this time discussing spraying of insecticides, Amos Badertscher of McCormick & Co. showed and described a new commercial model of a

Insecticide Baseball Champs

In a torrid seven inning soft-ball game between the Insecticide Bearcats and the Disinfectant Devils held at French Lick in connection with the 32d mid-year NAIDM meeting, the Insecticide contingent won 9 to 6. A last-inning home run by Harold King of R. J. Prentiss & Co. won the game for the Bug Killers. Fielding star for the Insecticide team was Ed Camson of Orbis Products. Jim Varley (the younger) of Baird & McGuire of St. Louis was both pitching and batting star for the Germicide boys. Nels Gothard, NAIDM president and Harry Ahles were the umpires. Herman Jordan of Federal Chemical Co. arranged the game.

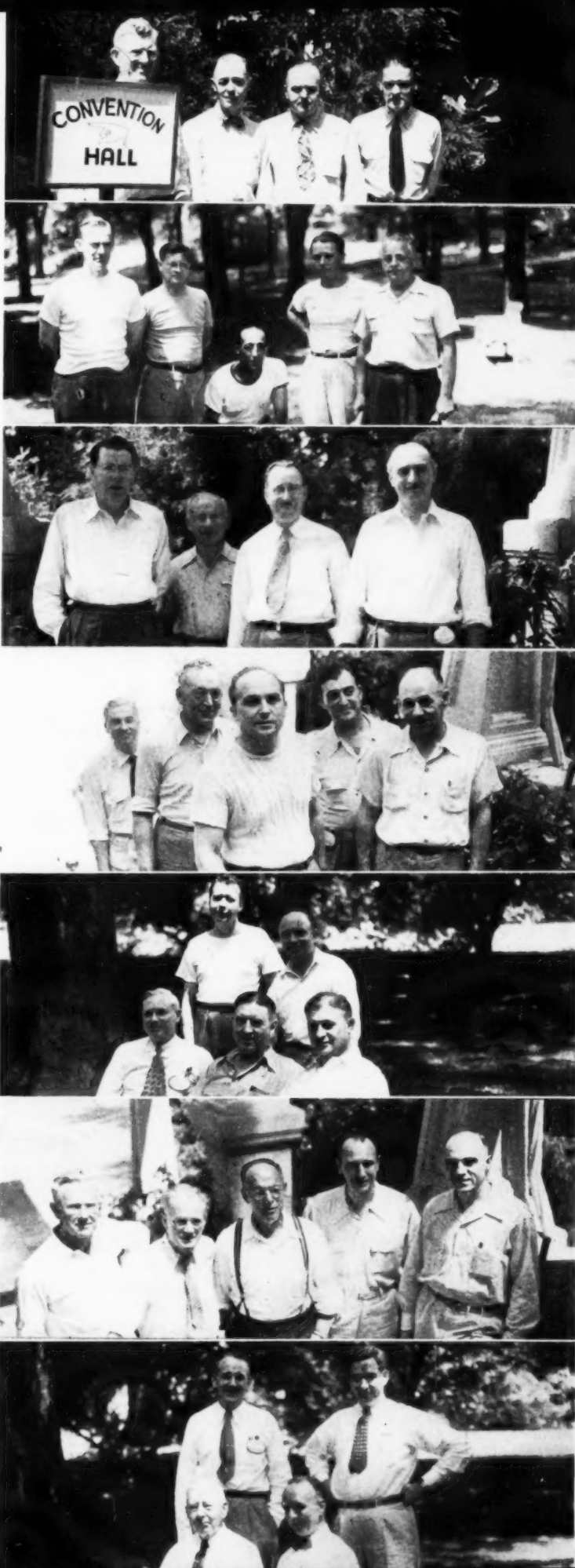
Honor C. C. McDonnell

Dr. C. C. McDonnell, former chief of the Insecticide Division, U. S. Department of Agriculture, and now a consultant on packaging and labeling, with headquarters in Chevy Chase, Md., was elected an honorary member of the NAIDM at the recent meeting at French Lick, Ind.

sprayer developed during the course of its wartime insecticide work by the Bureau of Entomology & Plant Quarantine, U. S. D. A.

The future of pyrethrum as an insecticide raw material was discussed by Russell B. Stoddard of Dodge & Olcott, Inc. The supply outlook is currently good, he said, with production in Kenya at a high level. Little price change is looked for this year, although there may well be lower prices before the bulk of the 1947 crop comes to market. Pyrethrum, he declared, must always be a relatively expensive insecticide raw material yet it has unique merits which will continue to keep it in use in insecticides, even at the higher price. None of the many new synthetics duplicate completely pyrethrum's fast action, safety, and wide effective field of action, he said. The future trend may well be in the direction of combination insecticides to lower costs. The industry, he predicted, will never return to straight pyrethrum insecticides. Neither will it shift entirely away from pyrethrum, for as yet you "can't make a good insecticide without it."

Answering a question as to the preferred strength of residual DDT sprays, S. A. Rohwer, assistant Chief Agricultural Research Administration, U.S.D.A., observed that better results are normally obtained with one application of a 5 per cent spray, than with two applications of a weaker spray. For effective control, a minimum deposit of 250 milligrams per square foot is needed on the sprayed surface. Answering a question as to the preferred





type spray for application of DDT to cattle, Dr. Rohwer indicated that the water dispersible type is considered safer than emulsion type sprays.

Grant Breuer of Sprayer Corp. of America discussed the subject of sprayers in reply to a question as to when a good low-cost portable electric sprayer may be obtainable. He reported that this will depend on when the industry can get together to agree upon standard specifications, indicating that it is the necessity of making so many different models for different companies that keeps sprayer costs high.

Harold Noble of S. B. Penick & Co. replied to another question as to the stability of pyrethrum insecticides to sunlight, indicating that to date no inhibitor has been developed which will preserve fully the killing power of pyrethrum against deterioration upon exposure to sunlight.

Dr. R. C. Roark, Chief of Insecticide Investigations of Bureau of Entomology and Plant Quarantine dealt with a question on the formulation of flea soaps for use on pets, advising that DDT would be a logical toxicant to use, provided the soap is not alkaline. DDT is decomposed by alkali, so it would be necessary to employ a superfatted soap. He also answered another question as to the correct definition of an aerosol, calling it "a suspension of a solid or a liquid in a gas."

Frank Nelson of Stanco, Inc. spoke on the application of DDT residual sprays to walls of dwellings. He indicated that many of the sprayers that have been used have not been properly designed for the purpose. They either give too fine a spray to build up an effective residual deposit, or they apply too much spray, resulting in dripping and staining. He re-

ported that new sprayer types are being developed, designed specifically for applying residual deposits.

S. R. NEWELL, assistant director, Production and Marketing Administration, U.S.D.A., opened the afternoon session with a talk on "Uniform Insecticide Regulation." He told of the work which the Department of Agriculture is doing in an effort to get states to revise their laws governing insecticides, and expressed the hope that a greater measure of uniformity in state regulations might be achieved by this program. He also reported that the Council of State Governments has initiated a request, addressed to the Department of Justice, asking that steps be taken toward drafting a proposed model State insecticide law.

A paper on "Livestock Sprays" was read by Dr. Ray L. Cuff, Kansas City regional manager for National Livestock Loss Prevention Board. Dr. Cuff reviewed the results of experiments conducted earlier this year in Kansas and Missouri with DDT livestock sprays for the control of horn flies on cattle. Treated cattle were found to gain in weight on the average one-half pound more per day than untreated cattle. Milk output was upped 20 per cent. Costs average 5 cents per head per season. Dr. Cuff reported that new larvacides are currently needed to take the place of rotenone, on which supplies are very short. He also called for the development of a single formulation for spraying cattle which will control a wide range of pests over a long period. His talk will be published in full in a later issue.

Dr. H. S. Telford of Dr. Hess & Clark, Ashland, Ohio, spoke on

NAIDM Golf Winners

NAIDM convention attendants took time off Tuesday afternoon, June 18, for the annual golf tournament. The industry champ this year is Tom Morgan of SOAP AND SANITARY CHEMICALS who took members' low gross with a 77. T. C. Greenwald of Greenwald-Berterges Co. won the first low net award with an 82-9-net 73. Second low net resulted in a three-way tie among Doug Robinson of J. R. Watkins Co., 78-3-75, Dick Quortrop of Barrett Co., 84-9-75, and Al Jamison, Velsicol Corp., 92-17-75. Low Gross shooter among the guests was Lew Waldron who broke par to turn in a 71.

"Toxicity of DDT Sprays on Livestock", his paper will be published in the July issue of *Agricultural Chemicals*. Comments on the Kettering report, also dealing with toxicity studies on DDT, were brought to the meeting by Melvin Goldberg of Geigy Co., Inc. Completing the study of DDT toxicity was a paper by Dr. Paul A. Neal, medical director, Industrial Research Laboratory, U. S. Public Health Service, Bethesda, Md., titled "A Synopsis of Experimental Work on the Toxicity of DDT." (See pg. 135.)

THE June 18 morning session opened with a talk on "Dry Cleaning Soaps" by Alexander Fabry, Adco, Inc. (See pg. 48.) Dr. Walter L. Mallman, Michigan State College, talked on "Cold Sanitization of Food Utensils." He reported that use of hypochlorite offers a satisfactory method for the sanitization of glasses, but that users tend to avoid such treatment under the impression that it will leave an odor. Quaternary ammonium compounds also do a good job, and have the advantage of offering no odor problem. In their tests Chloramine T did not equal either of the other materials in effectiveness. Various techniques for testing the efficiency of sanitizing agents were described, and reports submitted on a series of field tests in restaurants, bars, hotels, etc. Dr. Mallmann indicated that the "three-tank" system of glass sanitization is much preferred to the "two-tank" method. He advised that five gallons of the sanitizing solution be used on no more than 700 glasses. The solution should then be changed.

Clarence Weirich of C. B. Dolge Co. discussed "The Carnauba Wax Situation" at this session, commenting that the supply outlook gets progressively worse, and there seems to be little that either importers or users can do to improve the situation. Until recently the OPA had refused to take any step toward lifting of price ceilings, but just before its demise was working on an "escalator clause," which would allow advances on finished floor waxes in line with higher wax costs. Wax costs as of August, 1945, were to be set up as the comparative point, and

the difference between costs on that date and current costs for the wax content of the product would be taken as the measure of the price relief to be allowed. Of course, with the termination of OPA, all price controls have now ended.

A discussion of German waxes and T.I.C. Report No. 11173 was contributed by Dr. J. Vernon Steinle, research and development director of S. C. Johnson & Son, Racine, who visited Germany for the United States Government shortly after the end of the war to study the German wax industry, particularly the I.G. Waxes. Germany did not develop any new types of waxes during the war period, he said, but did expand wax production considerably, under the necessity of protecting its short leather supplies. I.G. Waxes, he reported, are produced from montan wax, which itself is recovered from brown coal. Montan is a difficult wax to bleach, and the refined grades depend upon oxidation of the crude montan. Chromic acid is used for the oxidation, and the highly oxidized montan, besides being used as such, also serves as a starting point for producing other grades. The ethylene and propylene glycol esters of these waxes form a second group, while neutralized esters constitute the third. In the fourth group are the compounds which result from blending I.G. Waxes with natural waxes. It seems highly improbable, Dr. Steinle reported, that we can look for any substantial help from the German wax industry for some time to come in relieving the short American position on waxes. The coal mines and the plants for production of crude montan are in the Russian zone, completely cut off from the factories for production of the refined grades, which are located in the American sector of Germany. Only if the Russians change their attitude about letting anything in or out of their zone, can we hope for any assistance from the German wax industry, he reported.

THE morning session on June 19 was given over to a series of papers on disinfectants. Dr. Paul A. Wolf

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DISINFECTANT TESTING

The Interpretation of Disinfectant Test Results Especially for Quaternary Ammonium Compounds

By Dr. George F. Reddish*

Lambert Pharmacal Co.

THE present favorable state of public health and personal well-being in civilized countries is due very largely to our knowledge of and use of anti-microbial agents. In order to appreciate the value of these agents in the prevention of infection and the spread of disease, it is only necessary to recall the conditions that prevailed before germicides were generally employed.

Disinfectants were first used for preventing the spread of disease early in the nineteenth century. As early as 1827 chloride of lime was used for this purpose, although at the time it was not known that contagious diseases were caused by micro-organisms. In 1846 solutions of chlorine were employed to disinfect the hands of surgeons to destroy "cadaveric poisons" and thereby prevent the spread of puerperal fever in maternity hospitals. Carbolic acid and related compounds have been successfully used since 1867.

The standard method of testing disinfectants chemically related to carbolic acid is the phenol coefficient test (1) (2). Since 5 per cent carbolic acid is generally recognized as an effective disinfectant under practical conditions of use, solutions of phenol-like disinfectants for practical use are made to equal 5 per cent carbolic acid in germicidal effectiveness. This is done by multiplying the phenol coefficient by 20. (3) Practical tests and extensive experience under conditions of use have shown that such disinfectants when diluted according to this

formula will kill all varieties of disease-producing bacteria with the exception of spore-formers.

It is important, however, to recognize the limitations of the phenol coefficient. (4) This test is applicable only to disinfectants which are chemically related to phenol and is not suitable for testing disinfectants not chemically related to phenol, such as chlorine compounds, quaternary ammonium compounds, etc. Also it must not be used in testing pure chemicals which are not related to phenol, such as mercury compounds, formalin, iodine, and other non-phenolic germicides. This method must not be used for testing antiseptics regardless of the chemical composition. (6) However, the significance and usefulness of the phenol coefficient must not be underestimated when used properly. (7)

Interpretation of Results

THE results of phenol coefficient tests on phenol-like disinfectants can be used for four main purposes: (1) to compare the germicidal activity of the disinfectant with that of pure phenol; (2) to compare the relative germicidal efficiency of different phenol-like compounds to determine which are best and most economical to use; (3) to indicate the germicidal properties of disinfectants by a single figure for specification purposes and for ease in purchasing by large agencies, such as federal, state, and municipal governments; and (4) to use as a means for calculating the effective dilutions for use in practice.

The first three uses of the phenol coefficient need not be discussed since they are self-explanatory.

The fourth use, however, requires further explanation and interpretation.

Since 5 per cent phenol is widely recognized as an effective disinfectant when used in practice, the dilution for actual use of disinfectants chemically related to phenol can be calculated by multiplying by 20 the phenol coefficient (based on a comparison with pure phenol). This factor has been used for this purpose by the Insecticide Division, U. S. Department of Agriculture since about 1915.

Extensive tests have shown that phenol-like disinfectants having phenol coefficients ranging from 2 to 20, when diluted to 20 times the phenol coefficient, were sufficiently germicidal to kill exaggerated numbers of *S. aureus* and *E. coli* on 5 kinds of flooring material in from 5 to 30 min., and usually in from 5 to 10 min. (3) Five per cent phenol killed these microorganisms in similar tests within 5 to 10 min.

There is a very considerable margin of safety in this use of the phenol coefficient test. For example, although a disinfectant kills *E. typhosa* by this test in a dilution of 1-450 in 10 min., the dilution used in practice would be 1-100 and would remain in contact with bacteria for much longer than 10 min. Also the dilution calculated from 20 times the phenol coefficient will kill all kinds of pathogenic bacteria except spores. There are a few exceptions to this general rule as shown by in vitro tests, but the margin of safety is such that under actual conditions of use the rule is sound.

If the limitations of the phenol coefficient test to disinfectants intended

* Before Natl. Assn. Insecticide & Disinfectant Mfrs., French Lick, Ind., June 18, 1946.

for use on inanimate objects and to those chemically related to phenol are recognized, no confusion need arise.

When chlorine compounds are tested for use in water decontamination, the method of choice is a practical test which can be interpreted directly. (8) In this test exaggerated numbers of disease-producing bacteria ordinarily carried by water are added to swamp water of high chlorine demand (15 p.p.m.) and tested for germicidal activity at 2° C., 20° C., and 27° C. for 5, 10, 20, and 60 min. This is not a standard method but it has been found useful in determining the practical value of chlorine disinfectants for use in treating drinking water.

Chlorine compounds for other disinfectant uses may be tested by what is known as the "Use-Dilution Method." (9) The germicidal activity of other non-phenolic disinfectants, such as pine oil emulsions, must be expressed in terms of effective dilutions. (10) Experience has shown that solutions of non-phenolic disinfectants which are germicidal by these use-dilution methods of testing are effective when used in practice.

Laboratory tests on disinfectants used for the cold sterilization of surgical instruments are also based on the results of practical tests and actual use tests. One such method was devised after determining the number of bacterial spores on dirty veterinary instruments and then using in the test 10 times the maximum number found on grossly contaminated instruments. (11) Such a test allows for a wide margin of safety and has been found quite satisfactory for this purpose.

It is evident that the accepted methods of testing certain disinfectants are satisfactory in that they properly evaluate the practical effectiveness of these germicides with wide margins of safety.

Quaternary Ammonium Compounds

QUATERNARY ammonium compounds are not phenol-like, do not act against bacteria in a manner similar to phenol, and therefore should not be tested by the phenol coefficient method (12) (13). Accordingly, phenol coefficient test results on quaternary

compounds are of no value and the 20 X coefficient factor cannot be used for determining the proper dilution for use in practice. This is common knowledge at this time and need not be discussed further.

Although quaternary ammonium compounds are known to be effectively germicidal under practical conditions of use, the laboratory testing of these germicides is not simple. These germicides are "tricky" in that unexpected results are often obtained. Certainly they give varying results by the usual methods of testing disinfectants.

For this reason it is necessary to develop special methods of testing these compounds. Several efforts have been made with varying degrees of success.

For some unknown reason the principal effort has been directed toward making use of the phenol coefficient test or some modification of this method. This has been done even though it is generally known that this method is limited to phenol-like compounds, (5) and those germicides which "act against bacteria in a manner similar to phenol." (12)

This misuse of the phenol coefficient test has resulted in confusion as to the real merits of quaternary ammonium compounds (14) (15). The test has been modified in such a manner as to discredit the germicidal value of such disinfectants and for no good purpose.

For example, effort has been made to show that the loop transfer method is not suitable in testing this class of disinfectants and that all test organisms are not killed in dilutions showing negative results by the loop transfer method. It has been shown that after exposing millions of bacteria to the diluted disinfectant a few are left. Because of this result by the modified tests it is indicated that quaternary ammonium compounds are less effective germicides than certain phenol-like disinfectants.

From a practical standpoint this is of only academic interest. The important consideration is "Will quaternary ammonium compounds effectively kill bacteria under practical conditions of use?" The laboratory method of testing must then be based on

results obtained under such conditions of use. Instead of using the phenol coefficient method of test, or modifications of it, and then attempting to interpret those results in terms of practical values, the results of practical tests must first be determined and then laboratory tests be devised accordingly.

Our present methods of testing disinfectants, as stated above, are all based on practical tests under conditions of use. There is no reason for making an exception in the case of quaternary ammonium compounds. Since the phenol coefficient test should not be used, and since it is impossible to interpret the results of such tests, a laboratory method must be devised which can be interpreted in terms of practical values.

Just what practical values should be set up for quaternary ammonium compounds? What criteria must be used to indicate germicidal effectiveness? What factors of safety should be employed? What kind of laboratory test should be used?

In answering these questions we should not be concerned with modifications of the phenol coefficient test for reasons already given. To answer these questions it is necessary to begin at the beginning, so to speak, and develop laboratory procedures especially suited to the testing of this special class of compounds.

A good beginning would be to consider the present U. S. Public Health Service standard for drinking water. This standard requires that potable water must have not more than 100 bacteria per cc. and show the presence of *E. coli* in not more than one 10 c.c. portion out of 50 c.c. tested. Such water is considered safe to drink and this standard has been accepted throughout the country and by various public health associations. A similar standard should be adopted for dish-washing sanitation. It should be required that under practical conditions of use, the disinfectant employed should reduce the number of bacteria on each article disinfected to less than 100 bacteria per 4 sq. cm. of rim surface as determined by the best procedures now in use. The factor of safety should involve the use of organic matter in

the test, a time period shorter than that used in practice, a temperature of test lower than that used in dishwashing, the number of organisms used should be greater than ordinarily found under practical conditions, and the resistance of the test organism should be representative of the most resistant found under practical conditions. The laboratory test should be a practical test, a "use-dilution" test which simulates practical conditions of use.

Such a method is already available at this time. This is the "Use-Dilution Method" developed by Mallman and Hanes (9). While this laboratory method is recommended for testing disinfectants generally, it seems to be especially suitable for the testing of quaternary ammonium compounds. The method, briefly, is as follows (9): Sterile glass rods, $\frac{1}{4}$ " x $\frac{1}{8}$ " with a small eye at one end for handling, are dipped in a 24-hour culture of the test organisms, *S. aureus* and *E. typhosa*. The seeded rods are dried on sterile filter paper in a petri dish for 30 minutes. The seeded rods are placed in the test solution at 20° C. for 1, 5, 10, and 30 minutes. Upon removal, each rod is rinsed in a tube of sterile water or neutralizing solution and then transferred to a tube of standard broth. After the broth has been shaken, 1-ml portions are plated. The tubes containing the rods are incubated 24 hours and replated if the tubes are not turbid from growth.

Desired dilutions of the disinfectant are made and 10 c.c. amounts placed in each of the glass seeding tubes. The tubes are placed in a 20° C. water bath and allowed to come to the temperature of the bath. Since the tests are run in duplicate, two tubes of the disinfectant are needed for each test organism.

Controls are run by placing one of the glass rods which has been inoculated directly into a tube of broth.

This is a practical test in which the two standard test organisms, *E. typhosa* and *S. aureus*, are dried on glass and then subjected to the disinfectant dilution. The following factors of safety are incorporated in the test: exaggerated numbers of organisms

are used in the test, from 120,000 to 200,000 per glass cylinder, although the numbers present on glassware and dishes are much less; the temperature used is 20° C., although in dishwashing much higher temperatures are employed; organic matter (serum) may be used in the test, although in dishwater sanitation the drinking and eating utensils are washed clean before being disinfected; the test organisms used represent in resistance those found under practical conditions of use, and in the case of *S. aureus* more resistant than most of the pathogenic organisms present. For these reasons it is suggested that this "Use-Dilution Method" be employed for testing quaternary ammonium compounds.

Although the "Use-Dilution Method" was not designed especially for quaternary ammonium compounds, it definitely is suitable for the testing of this class of disinfectants. In a series of tests (16) Hanes has demonstrated the comparative germicidal activity of quaternary ammonium compounds and other disinfectants under conditions simulating practical conditions of use. She has shown, for example, that a 1-1000 dilution of a quaternary ammonium compound has the same germicidal activity against *E. typhosa* and *S. aureus* by this test as a 1-50 dilution of a representative of the cresol compound class of disinfectants. Also a 1-2500 dilution the quaternary is equal to 1-100 dilution of the cresol compound disinfectant.

As reported by Hanes (16) a 1-1000 dilution of the quaternary ammonium compound reduced the number of *S. aureus* from 120,000 to 97 in 1 min. and 1-50 dilution of the cresol disinfectant reduced the number of *S. aureus* from 170,000 to 23 in 1 min.; both killed all of the organism in 5 min. in these respective dilutions. All of the *S. aureus* were killed by 1-2500 of the quaternary in 10 min. and all were killed by 1-75 of the cresol disinfectant in 10 min. All of the 180,000 *E. typhosa* present were killed by 1-2500 dilutions of the quaternary within 1 min. and all were killed by 1-100 of the cresol disinfectant in 1 min., and by 1-200 in 5 min., by 1-300 in 10 min., and by 1-400 in 30 min.

Under actual practical conditions of use a 1-1000 dilution of quaternary ammonium compound was used in dishwater sanitation and reduced the number of bacteria on drinking glasses from an average of 715 to an average of 1.75 per rim, and reduced the number of bacteria in the rinse water from an average of 45,533 to an average of 1.5 per c.c. (17). Such reductions under practical conditions of use are highly satisfactory and come well within the requirements of the U. S. Public Health Service for safe drinking water.

Practical experience with quaternary ammonium compounds for the sanitizing of eating and drinking utensils has given satisfactory results. It is evident that these disinfectants reduce the number of bacteria well below 100 per rim under practical conditions of use. Also results obtained by the "Use-Dilution Method" for testing disinfectants give equally satisfactory information. It is for this reason that this method is recommended for the laboratory testing of this class of disinfectants.

While it is important to make comparative studies under practical conditions of use by means of present procedures, (18) such practical tests do not lend themselves for use as a standard laboratory method of testing and control. For this purpose a "Use-Dilution Method" seems most promising.

It is quite likely that the "Use-Dilution Method" proposed by Mallman and Hanes (9) will require some modification before it can be used for quaternary ammonium compounds. Leavitt, (19) in a comparative study of various disinfectants, found that in testing quaternary ammonium compounds by the "Use-Dilution Method" there is sufficient carry over of the disinfectant into the subculture broth to prevent the growth of the test organisms, although growth occurred in agar plates made from dilutions. This difficulty can probably be corrected by using a larger quantity of media for subculture and/or using a different kind of medium. Both liquid media and agar plates should be used as subculture media in which dilutions of the

(Turn to Page 148C)



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AEROSOL MARKETING

THE marketing of aerosol insecticide bombs is a subject which has received widespread attention and discussion ever since their development and initial manufacture for the Armed Services in 1942. Several important factors have held the spot light of interest in these discussions. While it has been generally conceded that this method of dispersing insecticides is highly efficient and effective for flying insects, there has been much controversy as to the efficiency and effectiveness of the use of aerosols against crawling insects, such as roaches. There has also been a question as to the willingness of the public to purchase the relatively large amount of insecticide at one time, as represented by a one-pound aerosol bomb, when the previously available oil-base fly sprays could be purchased in almost any desired quantity.

Many million aerosol bombs were made for and used by the Armed Services during the war, in practically all theaters of war. This exposed many millions of Americans to this method of dispersing insecticides, in addition to many persons in foreign countries, who were interested in insect control. Thousands of letters have been received from members of the Armed Services and from individuals in foreign countries desiring information as to where they could purchase these bombs for their private use and, in most cases, desiring to become a part of the distribution system of this amazing new product. The exceptionally large number of these letters reduced appreciably the doubt in the minds of aerosol bomb manufacturers as to whether or not there would be a demand for the product when it could be released to the public.

The cessation of hostilities came suddenly and unexpectedly at a time

* Before Natl. Assn. Insecticide & Disinfectant Mfrs., French Lick, Ind., June 17, 1946.

when all manufacturers were being pressed for increasingly greater production of bombs. War contracts were terminated abruptly. Immediately afterwards, aerosol bombs began to appear for sale to the general public. These first bombs were identical with those which had been manufactured on war contracts. They contained no information for the user as to the proper use of the device against common household pests, nor the precautions which should be taken in the use of the bomb, all of which information had been issued by Army Headquarters to the users of government-issue bombs. The natural and logical outlet for these first aerosol bombs was the department store, because of their large volume sales and their desire for an item of this kind, with which they could develop a large campaign and draw people into their store. However, the buyers' enthusiasm, at least in one city, apparently led to over-buying for the lateness of the season, with the result that a price war was started with such intensity that prices changed almost hourly. This price war, which gained nation-wide publicity, was another factor creating much discussion concerning the marketing of aerosol bombs.

Believing in the future of the aerosol insecticide industry, we desired to confirm our belief as far as possible. Accordingly, after "dressing-up" our bomb and improving the release mechanism and the insecticidal formula for home use, and after writing complete instructions for use, Westinghouse first offered an aerosol bomb to the general public in a test sales activity.

While we felt rather certain of the answers to several questions, we desired more concrete evidence to substantiate these opinions. Of primary importance in these questions was, "Will the average housewife spend \$3.00 for an aerosol bomb when other

By R. E. Ditsler*

Westinghouse Electric
& Manufacturing Co.

insecticides can be purchased in smaller quantities, even though in insecticidal value the two are comparable?" The second was, "Would the results obtained from the use of the first bomb induce the user to buy again and again?" Also, "From what type store would the bombs be purchased?" The test sales activity was conducted in September, 1945, in Jacksonville, Florida. Approximately 80 outlets were selected throughout the city to give a cross-section of the various types of stores, including grocery, both super-market and independent, drug stores, hardware stores, and filling stations, in addition to the department stores. These stores were located strategically to give representation in all classes of neighborhoods. Because actual sales results of the retail outlets were to be checked for this period, the merchandise was delivered to all stores at one time in such a manner that display and sale would begin simultaneously.

The sale to the public began just a couple of weeks after an extensive promotion by one of the local department stores of a 5 per cent DDT oil-spray insecticide, during which approximately one gallon of insecticide was sold for every four homes in the city. It had been anticipated that 5,000 bombs would be sold during the first 30-day period. However, much to our surprise, the 5,000 bombs were actually sold by the retailers within the first week, and by the end of the 30-day period the sales were approximately one bomb for every 8 out of 10 homes in the city. The actual retail sales recorded by store for the preliminary activity and, as would be expected, the department stores sold by

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far the greatest number per store. The sales by the other stores were remarkable in that the total sales were not necessarily found in the larger outlets, nor in the areas where the middle or above income families were to be found. Sales activities per store showed some of the smaller outlets in the poorest neighborhoods to do outstandingly well, while other larger stores in the same neighborhood did a poor job. Similar conditions and the converse were found in other localities. The sales per store seemed to vary not upon the size or the location, but principally upon the effort placed upon the item by the individual store.

INCLUDED with each of the first few thousands of bombs sold was a return postcard on which we requested the name and address of the purchaser. After several months had elapsed, during which time the user had an opportunity to formulate opinions concerning the product, a personal survey was made of these users in an effort to learn the public reaction to the use of an aerosol bomb. Over 92 per cent of these users indicated that the aerosol bomb had done what was expected of it, and the majority of them indicated "more than expected." 90 per cent expressed their intention to buy additional aerosol bombs. It is particularly interesting to note that in spite of the statement made by many entomologists to the effect that aerosol bombs cannot successfully be used against crawling insects, and also the statement issued by the U. S. Department of Agriculture that the use of aerosol bombs is not recommended nor economical for crawling insects, 87 per cent of the purchasers contacted named roaches as the No. 1 insect nuisance on which they had used the aerosol bomb effectively. Consumer satisfaction in the use of aerosol bombs against roaches seems rather obvious, with 87 per cent of these users having expressed satisfaction and with 90 per cent expressing a definite intention to buy additional aerosol bombs. In the survey the following additional advantages were given as the reason for desiring to purchase additional bombs: "easy to use," "cleanliness," "killing

power," "penetrating powers," "convenience of form," and "economy."

Sales records since this test activity have confirmed the test results. One fact of particular interest is that the aerosol bombs have been found to be less seasonal in sales than was expected. As an example an activity was conducted by several retail outlets in a northern city in December which produced results far greater than had been expected or hoped for. Many sales were made which were to be used as Christmas gifts. Further evidence of this is that in some instances orders are being placed today for delivery of aerosol bombs in the early fall months.

The results of this marketing survey confirmed our earlier opinions and left little doubt in our minds as to the future of the aerosol insecticide dispenser business. There is, of course, much speculation as to what form aerosol bombs will take in the future and also as to whether some ingredients other than insecticides might not be packaged in a similar manner. There are already small single-shot dispensers and larger five-pound containers, in addition to the more common one-pound size. There are refillable and non-refillable bombs in the one-pound size. What the future holds for aerosol manufacturers is yet to be determined.

There is apparently some confusion in the minds of many people as to whether or not Westinghouse would continue to manufacture aerosol bombs upon termination of war contracts because statements have been made to the trade that we would not do so. We first entered the manufacture of this product upon offering our assistance to the Army, for whom the basic idea had been developed by the U. S. Department of Agriculture. We were logical manufacturers of the device, because our existing manufacturing facilities were particularly well suited for it and our experience in the handling of "Freon" for many years in the manufacture of refrigeration equipment was exceedingly valuable in the early stages of development. We were actually able to make our first shipment within seven weeks after we first learned the requirements. It is

because of our experience during the war and the fact that our manufacturing facilities are so well suited to the manufacture of this device, that we have determined to enter the insecticide field with an aerosol bomb.

Germicidal Aerosols

The use of germicidal aerosols for air sterilization is not new, but the technique has been recently perfected. Sodium hypochlorite, propylene glycol, triethylene glycol and similar compounds have been used with good success. The most efficient agent appears to be the fatty alcohol sulfate derived from coconut oil. One gram of this in 4 billion cc. of air is bactericidal. *Manufacturing Chemist* 17, 115-6 (1946).

Carbohydrate Insecticides

Starch and cellulose thiocyanacetates, thiocyanobutyrate, selenocyanacetates, tellurocyanacetates, and like compounds are useful for killing house-fly maggots and moth larvae, as insecticides, and as moth-proofing agents. A method is described for the preparation of starch thiocyanacetate and similar compounds. U. S. Patent No. 2,392,959. J. N. Borglin, to Hercules.

Mosquito Control in Canada

Mosquito control measures employed in Hamilton, Ontario, include filling and draining, and spraying with an 80:20 mixture of used crankcase oil and kerosene from boats, or with 1 per cent DDT in kerosene from the air. It is expected that 2 sprayings per season will be sufficient. W. H. Collins, *Eng. Contract Record* 58, No. 10, 52-3, 149.

Rot-proofing Agent

A proofing agent used by the Army in the Pacific to protect tents and other fabrics, can be applied to porch-chair coverings, hammocks, shower curtains, etc., to give them longer life by preventing mildew attack. The agent is dihydroxy-dichlorodiphenyl-methane, sold by Givaudan-Delawanna, Inc., New York, as Compound G-4.

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Toxicity of DDT . . .

a report on experimental studies

By Dr. Paul A. Neal*

and

Dr. W. F. von Oettingen

Industrial Research Laboratory

U. S. Public Health Service

DURING the past three years the toxicity of DDT for insects, as well as for mammals, has been investigated on a broad scale. Many of the results of such studies were not published during the war because of their military nature. Since the end of the hostilities, however, numerous papers have appeared in print and, although many additional findings and observations will be published in the near future, it is now possible to give a reasonable discussion of some of the experimental work on the toxicity of DDT for mammals as published by different investigators in this country representing Federal agencies, Universities, and private laboratories.

In the early spring of 1943, at the request of the Office of the Surgeon General of the U. S. Army; the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture; and the Office of Scientific Research and Development of the National Research Council, a broad study was undertaken on the toxicity of DDT to mammals by the following laboratories:

The Industrial Hygiene Research Laboratory of the National Institute of Health undertook a study of the toxicity of DDT when used as dust, aerosol mist and spray, with special reference to its potential dangers with inhalation and absorption through the skin. The Division of

Pharmacology of the Food and Drug Administration undertook the study of its toxicity with oral administration, and its effects on the skin with special reference to the effect of continued ingestion of small doses as might result from the contamination of food. The Division of Physiology of the National Institute of Health studied its toxicity with various routes of administration, except inhalation. The Kettering Laboratory of the University of Cincinnati undertook the study of the toxicity of commercial DDT, with various routes of administration, including the effects of repeated administration of small doses. Subsequently, the Chemical Warfare Service, Edgewood Arsenal, and several University laboratories investigated its toxicity and pharmacodynamic action. Additional studies of the toxicity of DDT to warm-blooded animals were made by the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture. The Fish and Wildlife Service, Department of the Interior; the Bureau of Medicine and Surgery, U. S. Navy; and several private laboratories. It should be mentioned that additional toxicological studies were made in Switzerland and the British Empire. The closest collaboration and exchange of results were maintained between the various laboratories.

All these investigators agree that DDT acts as a toxic agent to warm-blooded animals when absorbed in sufficient amounts.

Physically, DDT resembles flour; it is tasteless, and in the pure form has no noticeable odor. The white crystalline powder is almost insoluble in water. In the preparation of most insecticidal mixtures DDT has to be dissolved in certain organic solvents which in many instances cause certain toxic effects of their own.

In any consideration of the toxicity of DDT to animals and man, we have therefore the problem of distinguishing between the effects of DDT *per se* and those of its dispensing vehicle. It is unfortunate that the physico-chemical properties which characterize an effective solvent for DDT are the ones which are frequently responsible for irritation of the skin and mucous membranes. Most petroleum distillates commonly used as vehicles have fat-solvent properties which are responsible for the skin irritations which may follow heavy exposures. In addition, excessive inhalation or absorption through the skin of many solvents can constitute a major exposure and may produce such systemic effects as nausea, vomiting, fatigue, headache, and other nervous system manifestations. Symptoms of paresthesias and anesthetics may also result from contamination of the skin with some solvents. However, it should be emphasized that the symptoms produced by solvents, either locally or systemically, set in rather promptly; whereas, those produced by DDT itself, would usually develop only after a latent period of several hours.

Those governmental agencies which have been responsible for the development of DDT insecticides have recognized the inherent ill-effects which may result from exposure to solvents, and have recommended only the ones which are least harmful. They have emphasized that benzol and the chlorinated hydrocarbons, such as carbon tetrachloride and especially tetrachloroethane, should not be used in the preparation of DDT insecticides.

The development of DDT insecticides has been accompanied by changes in the methods of application of insecticides, inasmuch as it has been found necessary to decrease the par-

* Before Natl. Assn. Insecticide and Disinfectant Mfrs., French Lick, Ind., June 17.



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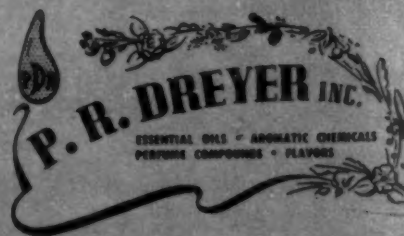
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ticle size of the mist, spray, aerosol, and smoke to relatively small particles or droplets. Absorption through the respiratory tract and penetration into the alveoli depends largely upon the particle size. The use of aerosols, smokes, and power sprayers produce particles which can be absorbed through the lower sections of the respiratory tract. It should be emphasized that the desired insecticidal effect is produced by an extremely small amount of DDT and that the resulting concentration of DDT in the air is correspondingly small. Even by the repeated dispersion of an aerosol at intervals of 5 minutes it is impossible to build up excessively high concentrations of DDT in air, because DDT settles out rapidly. DDT does not present a dust hazard upon reagitation of the air, following the initial applications, for it characteristically will adhere firmly to any surface with which it comes in contact.

Toxicity to Animals

EXPERIMENTAL studies demonstrate that DDT can be absorbed through the gastrointestinal tract, the respiratory tract, and when in an oily solution through the skin of mammals. Dry, powdered, pure DDT does not cause irritation of the skin, in either animals or man as shown by Neal, von Oettingen et al, 1944; Draize, Nelson, Calvery, 1944. There is no evidence that, on contact, it produces a sensitizing effect on the skin (Dunn, Dunn and Smith, 1946) or other allergic reactions, such as asthma.

All studies of experimentally produced acute DDT poisoning offer evidence that mammals react to massive dosages with a typical neurologic syndrome. The initial symptom is usually a twitching of the eyelids and is accompanied by hyperexcitability and nervousness. The twitching progresses into a severe and generalized tremor. The next phase is indicated by a clonic-tonic type of convulsion; it is followed by twitching and a second, more prolonged, convulsion. These clonic spasms often interfere so seriously with respiratory movements as to cause respiratory embarrassment. Following the abrupt termination of the convulsive phase, the animal is

left exhausted and motionless; hyperpnea may be marked. This sequence of nervous reaction may be repeated several times before it resolves itself into final state of continuous, severe tremor and the subsequent coma which precedes death. (Neal, von Oettingen et al, 1944; Philipps and Gilman, 1946; Smith and Stohlman, 1945; McNamara, Bing and Hopkins, 1946; Orr and Mott, 1945; Lauger, Pulver and Montigel, 1945; and others.)

This pattern of nervous symptomatology, with some minor deviations, is presented in all of the 12 animal species in which acute DDT poisoning has been studied in detail by several investigators. The convulsions can be elicited by mechanical stimuli, such as sudden noise and jarring, and in this respect resemble those seen in strychnine poisoning (Neal, von Oettingen et al, 1944). Data from electro-encephalographic studies on acutely poisoned animals show a pattern of electrical activity which correlates with the time sequence of the observed neurological symptoms (Philipps and Gilman, 1946).

McNamara, Bing and Hopkins, 1946, found that the ingestion of 100 mg. per kilo of DDT over periods varying from 2 weeks to 5 months causes coarse tremors which disappear upon withdrawal of the DDT. The daily administration of 150 to 200 mg. per kilo for the same period of time results in severe neurological symptoms consisting of tremor, exaggeration of the stretch reflex and the placing reaction, and aberrations in gait. Upon discontinuance of the DDT, the tremors disappear; however, the other neurological symptoms persist for some days, presumably because of cerebellar dysfunction. They find that such doses of DDT cause an increase of cardiac output and systolic discharge associated with a decline of arteriovenous oxygen difference.

Philipps and Gilman (1946) and Philipps, Gilman and Crescitelli (1946) found that the intravenous injections of lethal convulsant doses of DDT in emulsion cause in dogs, and less frequently in cats and rabbits, ventricular fibrillation. It occurs during the first convulsive episode, and is

believed to be due to a sensitization of the myocardium to sympathetic stimuli.

Inhalation experiments performed with aerosols containing an oil solvent and 3 per cent DDT illustrate a difference in susceptibility between species. Mice are more susceptible than rats, and guinea pigs, dogs and monkeys prove much more resistant to such an inhalation exposure (Neal, von Oettingen et al, 1944, 1945).

With oral administration the LD50 for a single dose of DDT dissolved in oil is around 200 mg./kg. for the rat. It ranges from 300 to 450 mg./kg. for the rabbit, guinea pig, cat and mouse, in that order, with the mouse requiring the largest dosage on a per kilo basis (Woodard, Nelson and Calvery, 1944; Smith and Stohlman, 1944; Cameron and Burgess, 1945; Philipps and Gilman, 1946). Preliminary work with goats indicates that a single dose of 1000 mg./kg. in olive oil given by stomach tube produces only moderate and temporary toxic manifestations (nervousness and tremors). A dosage of this magnitude proves fatal only if it has been administered repeatedly (Neal, von Oettingen et al, in preparation). With intravenous injection of DDT emulsions these differences between animal species become less marked (Philipps and Gilman, 1946).

WITHIN a single species further variation in speed of onset of symptoms, length of survival, and magnitude of dosage tolerated is encountered. These variables are observed to be related to the following factors:

- a. The physical state of the DDT,
- b. The route of administration,
- c. The type of vehicle, or dispersing agent,
- d. The maturity of the animal, and
- e. The nutritional state of the animal.

DDT dissolved in oil and administered orally to cats and rabbits may not produce symptoms for 60 minutes, and the LD50 dose may be in the magnitude of 300 mg./kg. In contrast, an intravenous injection to the same species of lecithin-peanut oil emulsion of only 40-50 mg./kg. of DDT will cause symptoms to appear within 4 to 10 minutes and death within an hour. However, the lethal dosage may

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be even higher than 300 mg./kg., and the onset of symptoms slower when the oral administration is in a *suspension in gum acacia* (Woodard, Nelson and Calvery, 1944; Smith and Stohlman, 1944). The oral administration of much more than a single lethal dose does not appear to hasten the course of the symptoms, probably because the rate of absorption from the gut interposes a limiting factor.

A series of experiments on the effect of single inhalation exposures to high concentrations of an aerosol containing 3 per cent DDT gives evidence that young rats and mice are more sensitive than the adults of these two species (Neal, von Oettingen et al, 1944, 1945).

Preliminary work with goats indicates that DDT toxicity is related to nutritional condition, in that adipose animals tolerate larger quantities than those with very little fat (Neal, von Oettingen, et al, in preparation).

Woodard, Ofner and Montgomery (1945), and Woodard and Ofner (1946) show that DDT is stored in fat. They stated that upon starvation of animals these DDT deposits may be mobilized to cause toxic effects.

There is no definite evidence which would indicate that DDT produces any marked or characteristic change on the blood cell picture. Studies of the blood constituents during chronic sub-acute DDT poisoning in dogs, reveal only a drop in hemoglobin, which, over a period of days, results in hypochromic anemia. It is considered that this anemia is related, indirectly, to the dietary deficiencies produced by prolonged anorexia and inadequate food intake during repeated periods of tremors and convulsions. (Neal, von Oettingen and others, 1944, 1945; Smith and Stohlman, 1944; McNamara, Bing and Hopkins, 1946; Cameron and Burgess, 1945).

Clinical tests of liver and kidney function are only moderately positive in severe chronic poisoning. (Neal, von Oettingen et al, 1944; Smith and Stohlman, 1945; McNamara, Bing and Hopkins, 1946.)

Sarett and Jandorf (1946) found that in chronic poisoning of rats the liver lipids and the liver weight are increased.

The principal histopathological finding in animals exposed to high concentrations of DDT is moderate sub-acute degeneration of the liver. Histopathological changes in the brain and spinal cord of animals dying with

Although DDT is deadly to many insects, it is not harmful to man if properly applied . . . as with any insecticide, precautions must be taken in its use

typical DDT tremors are very slight. Often the histopathological changes found are insufficient to account for the death of the animals. (Lillie and Smith, 1944; Nelson, Draize, Woodard, Fitzhugh, Smith, Jr. and Calvery, 1944; Neal, von Oettingen et al, 1944, 1945; Cameron and Burgess, 1945.)

As mentioned previously, symptoms of DDT poisoning can be produced within 3 to 5 minutes following the intravenous injection of an emulsion. Following the injection of a massive dose, the symptoms are well developed within 30 minutes and death may occur within 60 minutes. It is suggested that the speed of action produced by injections of emulsion is strong evidence that DDT itself exerts the primary toxic action and that its intermediate breakdown products are not primarily responsible for the toxic manifestations. Further evidence for this interpretation is offered by experiments in which eviscerate cats, injected with DDT emulsion, show a course of symptoms similar in time and nature to those evidenced by control animals (Philipps and Gilman, 1946).

A large portion of the DDT administered orally is excreted unchanged in the feces. Part of the amount which is absorbed into the body can be recovered from the urine within 4 days in the form of di-(p-chlorophenyl)-acetic acid (DDA). (White and Sweeney, 1945; Neal, Sweeney et al, 1946; Ofner, Woodard and Calvery, 1945; Smith and Stohlman, 1945.) Although recovery in the form of DDA accounts for significant amounts of the DDT

which has been absorbed or injected into the body, a larger fraction is not thus accounted for. A portion of this remaining fraction is excreted in the bile in an undetermined form, and some is stored in the body tissues and may be quite gradually released. The amounts of DDT stored in organs such as the spleen, liver and kidney correlate roughly with the amount of neutral fat present in them.

Woodard, Ofner and Montgomery (1945) demonstrate the presence of significant amounts of DDT in the milk of lactating dogs; similar results in rats were reported by Telford and Guthrie (1945).

Toxicity to Man

It was shown by White and Sweeney (1945) that following oral administration of DDT in olive oil to rabbits it was partly excreted with the urine as di-(p-chlorophenyl)-acetic acid (DDA). There was no evidence that the same holds true for human beings. Because of the clinical and forensic importance of this question for the detection of DDT poisoning, the excretion of DDT was studied by Neal, Sweeney et al (1946) in one human subject. At the same time, close attention was paid to the detection of any possible toxic symptoms.

A normal male human subject volunteered for this experiment. The same person had been exposed in July 1943, to a calculated concentration of 1 mg. of DDT per 1000 cub. ft. for 1 hour daily on 6 consecutive days and 4 weeks later to an even higher concentration for 1 hour daily on 5 consecutive days without any untoward effects (Neal et al, 1944). In addition, the same subject had ingested 500 mg. of DDT in olive oil in December 1944, without experiencing any signs of toxic effects. In September 1945, after a foreperiod of 2 weeks, during which time the urine was examined daily and the blood picture twice, the same individual underwent a detailed clinical examination, including a teleroentgenogram, an electrocardiogram, an electroencephalogram, one liver func-

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tion test, and one blood sugar determination. Special emphasis was placed on nervous functions as indicated by reflex excitability and coordination tests. Following this examination the subject took 11 mg. per kilo, a total of 770 mg., of pure recrystallized DDT in approximately 25 cc. of olive oil on an empty stomach, and the examination was repeated 48 hours later.

The subject noted no subjective signs or symptoms following the ingestion of this dose, and no deviations from the preexamination findings were found in the second examination. Specifically, the neurological examination showed normal reactions. There was no evidence of muscular fibrillation, tremors, or twitchings, or other abnormal reaction, nor did the electroencephalogram taken two hours after the ingestion of DDT show any deviations from that made prior to the ingestion of DDT.

The daily examination of the urine two weeks prior to and two weeks after the ingestion of DDT showed nothing abnormal, nor were there any changes of the blood picture one and two weeks after the exposure, or evidence of liver injury.

It can, therefore, be stated that following the ingestion of 11 mg. per kilo, corresponding to 770 mg., of DDT by a normal person, no subjective or objective manifestations could be discovered which would indicate an injurious effect of this dose on the organ functions or the nervous system. It will be noted that this dosage (11 mg./kg.) is approximately 1/15 of the LD_{50} for rats.

The excretory studies made with 24-hour urine specimens covered the determination of organic chlorine and of di-(p-chlorophenyl)-acetic acid (DDA), but unchanged DDT could not be detected in the urine.

The determination of organic chlorine in nine 24-hour urine samples collected during the foreperiod gave an average value of 1.0 mg. with 0.8 and 1.5 mg. as extremes. After the ingestion of 770 mg. of DDT it rose on the first, second, third, and fourth days to 2.9, 4.0, 3.0, and 1.5 mg., respectively, and during the subsequent 10 days the average was 1.0 mg. with 0.8 and 1.4

mg. as extremes. It appears, therefore, that after ingestion of 770 mg. of DDT the peak of the excretion of organic chlorine occurs during the second 24-hour period and that thereafter the excretion decreases rapidly to normal values.

The results of these determinations show that following the ingestion of 770 mg. of DDT there is a sharp rise in the excretion of di-(p-chlorophenyl)-acetic acid which reaches its maximum on the second day, rapidly decreases on the third and fourth days, and thereafter gradually decreases.

THE health hazards associated with the use of DDT as an insecticidal agent may be divided into two types:

- (1) The hazards connected with the manufacture, packaging, mixing and handling of DDT-containing insecticides, as well as the hazards connected with the applications of such insecticides, both as pertains to their use by trained sanitarians, as well as their household application.
- (2) The dangers to the general population resulting from the ingestion of various types of foods contaminated with small quantities of DDT.

With regard to type of hazard number 1, the dangers incident to its manufacture, mixing and application can be controlled by employing certain commonsense precautions. These precautions which have been defined by various governmental agencies have proven to be satisfactory in that, as far as can be determined at this time, no cases of DDT poisoning per se have been proven to occur among the some millions of individuals who have been potentially exposed.

The second type of hazard, contamination of food with DDT or what is the maximum allowable tolerance of DDT residue on foods, cannot be definitely answered at this time on the information available, in our opinion. It seems obvious, however, that the use of DDT insecticides for certain underground crops, such as potatoes and peanuts, would offer practically no hazard. This question is at present the center of interest of different governmental agencies who are working in closest collaboration to solve it, as demonstrated by the objectives of the Federal Interdepartmental Committee

on Pest Control. The Interdepartmental Committee on Pest Control was established by the responsible officers of the Departments of Agriculture, Interior, Navy and War and the Federal Security Agency in response to an invitation from the Secretary of Agriculture. The function of this Committee is to consider problems of mutual interest, such as:

- (a) The field of research, including cooperative planning where desired and free interchange of information on results;
- (b) collaboration in preparing and issuing information to the public on matters which cover the general field of chemicals used in pest control;
- (c) collaboration and coordination in planning and executing control programs where there is a joint interest; and
- (d) unification of policies on the use of such chemicals when they are applied for controlling pests over large areas.

The Committee is composed of two or three representatives from each governmental unit, but will, as occasion and as subject matter indicates, have full benefit of the advice and council of specialists of various departments. Mr. S. A. Rohwer, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, is Chairman of this Committee.

In summary the following may be stated:

Although DDT is deadly to many insects, it is not harmful to man if properly applied. DDT is definitely less toxic than Paris green and sodium fluoride—long in use as common insecticides. But as with any insecticide, there are certain precautions which must be taken to avoid any possible harmful effects.

In spite of its toxicity, no harmful effects have been observed in animals exposed in rooms containing many times the recommended insecticidal concentration of DDT in sprays or dusts. But careless use and exposure to abnormally high concentrations of DDT may cause toxic effects. Therefore, it is essential to follow carefully the directions for its use as a household insecticide.

Since there is no specific antidote for DDT poisoning, the treatment has to be symptomatic. It is of para-



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mount importance to prevent further absorption by removing any contamination from the skin by washing with soap and warm water. Following accidental ingestion of DDT, it should be removed promptly from the stomach by gastric lavage with warm water, or from the intestine by saline cathartics. Castor oil or other fatty cathartics or emulsions should never be used. Animal experiments indicate that nervous manifestations, such as tremors and convulsions, can be controlled by phenobarbital. In severe cases sedation is especially indicated and may prove of life-saving value.

It is very unlikely that food contaminated with DDT from ordinary home use will cause toxic effects in man, but such contamination should be avoided by removing food from the room or covering it during spraying.

DDT in dust form is not absorbed through the skin unless greases, oils, or greasy skin lotions are already present on the skin. Nevertheless, DDT powders should not be allowed to remain on the skin, and excessive inhalation of the powder should be avoided. Since the diluted dust (if uncolored) may be mistaken for flour or other foodstuffs, the material should be carefully labeled and every precaution taken to keep it away from children. Any danger of food contamination should be avoided.

DDT in oil solution is readily absorbed through the intestine and is also absorbed through the skin. Therefore, DDT-oil solutions should not be allowed to remain on the skin or saturate clothing. Wash the hands and exposed skin with warm soapy water; and if oil solutions or concentrates are spilled on the clothes, change them promptly. Avoid inhaling the mist and contaminating food with the spray. *Never use it on the skin or coat of animals.* If the solvent is inflammable don't use it near a fire.

It should be pointed out that many of the solvents (kerosene, etc.) used in preparing DDT insecticides in themselves may cause irritation of the skin and other harmful effects when handled carelessly. By observing proper precautions and cleanliness, these can be avoided.

If a good deal of spraying is to be done it is advisable to wear gloves, goggles, and a respirator to avoid excessive contact and inhalation of DDT and its solvents.

The labeling of insecticidal preparations is subject to the provisions of the Federal Insecticidal Act which is administered by the Insecticide Division, Production and Marketing Administration, U. S. Department of Agriculture, Washington, D. C. The question of the contamination of food by DDT comes under the jurisdiction of the Food and Drug Administration.

The Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Washington, D. C. and the Officer in Charge, Malaria Control in War Areas, U. S. Public Health Service, Atlanta, Georgia, have available information on the various types of DDT insecticidal mixtures, their usefulness against various insects, and the proper method of application.

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Testing of Roach Sprays*

Introduction

THE N.A.I.D.M. sponsored a fellowship at the Ohio State University from 1937 to 1942 for the study of testing methods suitable for evaluating liquid household insecticides against crawling insects. This project was directed by Prof. F. L. Campbell and employed as investigators at various times E. N. Woodbury, C. S. Barnhart, E. H. Glass, and J. M. Hutsel. Results of these studies have been summarized in various published articles^{1,2,3}, and much valuable information was obtained on both rearing and test methods. In spite of the fact that a number of test methods were devised and employed on both bedbugs and roaches, none of these methods received widespread official recognition. In 1943 Henderson⁴ reported on a liquid roach spray testing method being employed by the Production and Marketing Division of the United States Department of Agriculture. Since 1943 crawling insect test method studies have been conducted with N.A.I.D.M. support by F. O. Hazard, Wilmington College, Wilmington, Ohio, with special emphasis on the study of the Henderson method. Both liquid and powder methods for roach testing have been reported by Hazard^{5,6}. L. J. Bottimer⁷ published on the current method used by the Insecticide Division, Livestock Branch, Production and Marketing Division, United States Department of Agriculture, for the testing of liquid roach sprays.

The method here described is a composite of the Bottimer and Hazard method with certain modifications developed through cooperative tests between various laboratories of the N.A.I.D.M., and is felt to offer a satisfactory means of determining the relative efficiency of contact insecti-

cides dissolved in household spray base oils as roach sprays. As a biological test it is subject to variations which accompany the reaction of living organisms and should be employed under the supervision of a person familiar with the biological testing of insecticides. In order to measure with reasonable tolerance the relative position of different insecticides, the test is designated to be used in conjunction with the Official Test Insecticide as the basis of comparison.

II—Apparatus

A—Reference Insecticide—The reference insecticide shall be the current Official Test Insecticide (100 mg. pyrethrins/100 ml. deodorized insecticide base oil) prepared by the National Association of Insecticide and Disinfectant Manufacturers, Inc. each year. The O.T.I. must not be diluted or changed in any manner.

B—Test Insect—The test insect shall be healthy, normal, undeformed adult males of the German roach, *Blattella germanica* (Linn.) Recently emerged adult males, e.g., those whose pigmentation is not dark, shall not be used for testing purposes. In the case of cultures of known age, it is recommended that the adult stage have been attained at least three days prior to testing.

C—Rearing Room—This room may be of any convenient size, constructed so as to be free from strong drafts and maintained at a temperature of 75-85° F. and a relative humidity of 30-50%. It should be separate from the testing room in order to eliminate the possibility of traces of insecticide coming in contact with the test insects. Ventilation should be provided to reduce odor.

D—Testing Room—This room may be of any convenient size permitting adequate space for the operator to handle the test efficiently. While conducting tests this room shall be maintained at a temperature of

78-82° F. It is suggested that relative humidity be held between 30-50%.

E—Spray Chamber—The Spray Chamber shall be a box-like structure of solid material measuring 18" wide, 18" long, and 25" to 30" in height. The bottom of the chamber shall be covered with 1/2" mesh wire hardware cloth. Suitable guides shall be fastened to the chamber floor to permit the centering of the treatment container directly beneath the nozzle of the spray gun. The top of the chamber shall be open and fitted with suitable braces and mounting for the spray atomizer. The front wall of the chamber may be in the form of a sliding door permitting convenient access to the interior of the chamber. The chamber shall rest on a stand placing it at the proper height for convenient operation of the test.

F—Atomizer—The atomizer to be employed is the DeVilbiss Special No. 5004, which is the same atomizer specified for the Peet-Grady Test. This atomizer shall be operated with air free of oil, dust particles, or condensed moisture, and maintained at a constant pressure of 6.0 + or - 0.5 lbs./sq. in. The Atomizer when operated at a pressure of 12.5 + or - 0.5 lbs./sq. in. shall deliver 12 cc. of O.T.I. in 24 seconds (tolerance + or - 1 second) and this should be checked frequently. The atomizer shall be firmly mounted in a manner to permit adjustment and shall be arranged with the barrel in a vertical position and centered with the nozzle tip 28" above the bottom of the treatment container which rests on the chamber floor. The intake tube of the atomizer shall be bent at a right angle, adjusted with the open end pointing toward the floor and of sufficient length to permit the spray vials to be held in place without interfering with the spray cone.

G—Treatment Container—The treatment container shall be a screened bottomed container 3 1/2" in diameter

* Tentative method developed by National Association of Insecticide & Disinfectant Manufacturers for testing liquid roach sprays.

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with 3" side walls. 16 mesh wire shall be soldered in place to form the bottom of the container in such a manner that the entire bottom is completely open. Ordinary tin cups of the proper dimensions with handles removed and the solid bottoms replaced by wire screening have been found useful as test containers.

H—Recovery Dishes—Glass crystallizing dishes measuring 125 millimeters in diameter and 65 millimeters high shall be employed as recovery cages. The bottoms of the recovery dishes shall not be covered with filter paper or other material. 16 mesh wire screen covers may be employed as recovery dish covers during the 48 hour holding period following spray application in order to prevent the entry of wild roaches.

III—Procedure

A—Rearing of Test Insects—Any suitable method permitting the production of large numbers of the test insect under controlled conditions of temperature and humidity as previously described may be employed. The rearing technique described by Woodbury and Barnhart², which makes use of a brood chamber containing adult females from which large numbers of first instar nymphs may be collected at frequent intervals, has been successfully used in a number of laboratories. All molded food, dead females and empty egg cases should be removed weekly. Wild roaches shall not be used and all test insects shall have been reared under uniform conditions.

B—Food—Up until the time of testing the roaches shall be provided at all times with food and water. The standard food shall be Dog Chow Checkers manufactured by the Ralston Purina Co., St. Louis, Missouri, or equivalent.

C—Test Procedure—Adult male roaches shall be isolated in the recovery dishes or other suitable containers from the mass or aged cultures in groups of 20 by means of a suction device or any other suitable method which does not injure them. In selecting the test insects every effort shall be made to obtain uniform test groups.

The atomizer shall be in operation throughout the entire application

period under the previously described conditions. Prior to application of test samples the gun shall be thoroughly cleaned with a suitable solvent such as acetone and shall be primed with the spray solution to be applied. Spraying of individual test groups shall be effected by bringing an accurately measured amount of the test spray contained in a vial in contact with the atomizer intake tube.

Immediately before spray application the roaches shall be transferred to the screen bottomed treatment containers. These containers shall be free from all traces of insecticides and shall have the entire inner wall surface suitably oiled or greased to prevent the escape of the roaches and to confine them to the container floor. The treatment container shall be centered on the spray chamber floor directly below the atomizer nozzle and the spray applied as described above. Prior to spray application the treatment container shall be agitated sufficiently to distribute the test insects uniformly over the container floor. The treatment container shall be removed from the spray chamber 30 seconds after the start of spray application. The test insects shall be immediately transferred from the treatment container to the recovery dish. The treated roaches shall be held under rearing room conditions throughout the 48 hour observation period and shall receive neither food nor water.

In evaluating a test sample a minimum of 10 individual test groups

shall be run for the test spray in conjunction with 10 test groups receiving the O.T.I. An equal number of replicates shall be made for members of any given test series on a given test day. The dosage employed shall be the same throughout a given series of tests and of such magnitude to result in an average of 70 per cent to 90 per cent of the insects dead and moribund at 48 hours with the O.T.I. Cooperative tests among N.A.I.D.M. laboratories have shown the required dosage to be 0.5 to 0.9 ml.

D—Assembly and Evaluation of Data—Evaluation of test samples shall be made on the basis of observations taken 48 hours after spray application, at which time the percentage of test insects normal, moribund, and dead shall be determined. Any insect showing signs of life but incapable of locomotion shall be considered as moribund. Similar records taken at 24 hours or at intervals longer than 48 hours may be of interest in critical studies. It is recommended that if the test insects are to be held under observation longer than 48 hours they be furnished food and water at the end of the initial 48 hour observation period. Insects which withstand insecticide treatments shall be destroyed and in no case returned to the stock cultures or employed in further tests. In cases of semi-concentrate sprays or sprays of especially high toxicity to roaches they shall be tested by the above method as recommended by the manufacturer.

For example, if a manufacturer claims
(Turn to Page 148E)

Example of Test Data 0.7 ml. Dosage by Tentative N.A.I.D.M. Roach Test Method

Per cent Dead and Moribund 48 Hours					
Test	Date	O.T.I.	Spray A	Spray B	Spray C
1	5/13/46	90	85	100	100
2	5/13/46	85	75	45	90
3	5/13/46	30	50	55	100
4	5/13/46	65	70	40	100
5	5/13/46	100	85	65	100
6	5/13/46	75	75	85	95
7	5/16/46	80	85	35	100
8	5/16/46	65	70	65	100
9	5/16/46	95	90	30	95
10	5/16/46	80	45	60	100
Average		76.5	73.0	58.0	98.0

Reported as follows:

Spray A—Meets Standard
Spray B—Does not meet Standard
Spray C—Meets Standard

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fully employed in this laboratory for several years. The results are shown in table 1.

A wide range of values was obtained, but no definite conclusions could be drawn because of the temperature variations. The third test was performed on a day when there was a brisk wind which did not permit the temperature to rise much. Even so the recovery was about 12 per cent higher than that of the control.

At this point of the investigation it was learned from experiments conducted in England by S. H. Harper and in the United States by J. J. T. Graham (4), that temperature has an effect on the mercury-reduction method. A new series of tests was therefore started, provision being made for circulating tap water about the tubes during the 1-hour period of standing. The temperature of the reaction mixture was thus maintained at $15^{\circ} \pm 1^{\circ}$ C. A few tests were also made at 25° C., the temperature recommended as official (4), to see whether the reaction is also photosensitive at this temperature. The results are shown in Table 2.

Summary

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- (2) Association of Official Agricultural Chemists, *J. Assoc. Off. Agr. Chem.* 28: 72-73 (1945).
- (3) Audiffren, M., *J. Pharm. Chim.* 19: 535-536 (1934).
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(9) Sherman, C. S., and Herzog, R., *Ind. Eng. Chem., Anal. Ed.* 12: 136-137 (1940).

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DISINFECTANT TESTING

(From Page 129)

medication mixture would be inoculated.

In the case of mercury compounds, 200 c.c. of broth is used for subculture instead of the usual 10 c.c. quantity in order to avoid bacteriostatic effect. In order to correct this factor in a method for testing quaternary ammonium compounds, it may be necessary to use larger quantities of broth in subcultures, the exact amount to be determined by test.

On account of the cationic property of quaternaries it may also be necessary to use for subcultures a medium which will prevent combination of the positively charged cations with the negatively charged bacteria used as test organisms. It is quite possible that thioglycollate medium will prove satisfactory for this purpose.

Since the positively charged cations of the quaternaries are attracted to negatively charged glass, it may be necessary to conduct tests in some other container, such as quartz, neutral plastic, or some such suitable material. It is evident that glass containers should not be employed for the medication tubes (14) and tubes or plates made of some other kind of material must be used.

From information available at

this time it seems that the "Use-Dilution Method" or some modification of it offers considerable promise as a satisfactory laboratory method for testing the germicidal activity of quaternary ammonium compounds.

It is suggested that the Disinfectant Scientific Committee of the National Association of Insecticide and Disinfectant Manufacturers conduct comparative tests by the "Use-Dilution Method" and standardize the details of this method for the specific purpose of testing quaternary ammonium compounds. When this is done and a final procedure is devised, a unit of measurement such as a "Cationic Unit" can then be agreed upon based on results obtained by this method.

Conclusions

1. The phenol coefficient method is suitable only for the laboratory testing of phenol-like compounds.
2. The phenol coefficient method is not a suitable laboratory test for determining the germicidal activity of quaternary ammonium compounds.
3. The "Use-Dilution Method" or some modification, appears to offer considerable promise as a laboratory test for estimating the germicidal effectiveness of quaternary ammonium compounds.

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Table 2.—Effect of light on the analysis of pyrethrum by the mercury reduction method. Temperature controlled.

Lighting conditions	Equivalent amount of pyrethrin I found	Recovery
	Mg.	Percent
Temperature 15° C.		
Diffused daylight on laboratory bench (check at beginning of series)	27.7	97.7
Dark	27.0	95.2
60-watt incandescent lamp at a distance of 6 inches.....	28.1	99.1
15-watt fluorescent lamp at a distance of 7 inches.....	28.2	99.4
Bright sunlight shining through window onto laboratory bench, 8:30 to 9:30 a.m.....	28.7	101
Mercury-vapor lamp (100-watt) at a distance of 5 inches	32.2	114
Diffused daylight on laboratory bench (check at end of series)	27.3	96.3
Temperature 25° C.		
Dark	27.8	98.0
Mercury-vapor lamp at a distance of about 5 inches.....	35.0	123



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NAIDM MEETING

(From Page 125)

of Dow Chemical Co. called for an appraisal of disinfectants not on the basis of phenol coefficient or killing dilution alone, but by giving a broader over-all picture of the product. In evaluating a new germicide, a preliminary germicidal potency test would be required, either a phenol coefficient test or a determination of the killing time of the compound at different concentrations, depending on the nature of the product. Follow-up studies should then cover such factors as pH, organic matter, bacteriostatic vs. bactericidal action, organism specificity, so-called concentration coefficient and possible neutralizing agents upon the germicide.

Dr. George F. Reddish, Lambert Pharmacal Co., spoke on "Interpretation of Results Obtained in Testing Disinfectants, Especially Quaternary Ammonium Compounds," his paper appearing elsewhere in this issue. Dr. E. G. Klarmann, Lehn & Fink, Inc.,

also spoke on "Comparative Studies on the Bacteriostatic and Bactericidal Action of Quaternary Ammonium Compounds." Studies by Dr. Klarmann and Dr. E. S. Wright were reported to confirm and strengthen former conclusions that the F.D.A. method of disinfectant testing furnishes an erroneous idea as to the disinfectant potency of quaternary ammonium compounds. The "filter paper" technique, said Dr. Klarmann, "allows a more proper evaluation of the disinfectant performance of the four quaternary ammonium compounds and of the alkylamine tested, and shows it to be considerably lower than claimed." This paper will be published in full in the next issue of *Soap and Sanitary Chemicals*.

Another paper dealing with the testing of quaternary ammonium compounds was presented by Dr. Herbert Bernstein, Solomon Epstein and Jack Wolk of The Emulsol Corp. who also concluded that "since the phenol coefficient method fails to give the user of quaternary ammonium compounds a true performance evaluation of these materials, it is recommended that the industry adopt a performance function unit based upon actual large scale tests in those industries where bacteriological controls are imperative."

The discussion of disinfectant testing led to the adoption of a resolution as follows:

RESOLVED

That since the test methods of circular 198 (USDept Agric. Food and Drug Administration) are not satisfactory for evaluating certain recently developed commercial disinfectants, that the NAIDM request The Secretary of Agriculture to secure and set aside funds for the development of more adequate methods of testing germicides.

McCauley Wins Horseshoes

William E. McCauley of the Velsicol Corp., Chicago, was winner of the individual NAIDM horseshoe pitching championship held at French Lick in connection with the 32d annual mid-year meeting. The doubles championship was won by the team of Marvin Rolstead of the Cornelius Co., and John F. Benham, secretary of the National Association of Sprayer and Duster Manufacturers.

Members of the resolutions committee included Robert C. White, Jr., Robert C. White Co., Walter Andree, Sinclair Refining Co., and Amos Badertscher, McCormick & Co.

ROACH SPRAY TEST

(From Page 147)

his product to be three times as effective as the standard (O.T.I.), the spray shall be diluted at the rate of one part of the spray with two parts deodorized insecticide base oil prior to testing. The basis of comparison shall be the average percentage dead and moribund of the test sample as compared with that of the O.T.I. In reporting the test results the test sample shall be reported as "meeting the standard" if its average percentage dead and moribund determination at 48 hours is equal to, greater than, or within 5 percentage points less than that of the O.T.I. employed in conjunction with it. In no case shall actual numerical values be reported officially or any letter grade designations be assigned to the test samples as a measurement of their effectiveness against roaches. The accompanying table (See Pg. 147) records the results of a typical series of tests.

IV—Conditions for Official Evaluation

A—The test shall be conducted in accordance with the procedure previously described.

B—Twenty test groups of insects, numbering 20 roaches each (10 test samples, 10 O.T.I.) shall be employed in making an official evaluation.

C—The dosage shall be constant throughout a given series of tests and of such magnitude to give an average of from 70 to 90 per cent of the O.T.I. treated roaches dead and moribund 48 hours after spray application.

D—The toxicity of the unknown sample shall be reported as meeting the standard if its average percentage dead and moribund determination at 48 hours is equal to, greater than, or within 5 percentage points less than that of the O.T.I. run in conjunction with it. In cases of semi-concentrate sprays or sprays of especially high toxicity to roaches they shall be tested as recommended by the manufacturer. In

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no case shall numerical values be reported or any letter grade designations be assigned to the test samples as a measurement of their toxicity to roaches.

(1) Woodbury, E. N., 1938—Test Methods on Roaches—Soap and Sanitary Chemicals, Vol. 14, No. 8, pp. 86, 87, 88, 89, 90, 107, 109.

(2) Woodbury, E. N. and Barnhart, C. S., 1939—Tests on Crawling Insects—Soap and Sanitary Chemicals, Vol. 15, No. 9, pp. 93, 95, 97, 99, 101, 103, 105, 107, 113.

(3) Campbell, F. L.; Barnhart, C. S.; and Hutzler, J. M., 1941—Tests on Crawling Insects—Soap and Sanitary Chemicals, Vol. 17, No. 7, pp. 105, 106, 107, 109, 111, 113, 115; Vol. 17, No. 8, pp. 105, 107, 109, 111, 113, 115, 121.

(4) Henderson, L. S., 1943—A Roach Testing Method — Unpublished report, U.S.D.A. Insecticide Testing Laboratory, Beltsville, Md.

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(7) Bottimer, L. J., 1945—Roach Rearing and Testing—Soap and Sanitary Chemicals, Vol. 21, No. 12, pp. 151, 153, 155, 157, 159.

TRADE MARK APPLICATIONS

(From Page 61)

cream and since 1941 on cleanser and washing powder.

TIDE—This in upper case, extra black, bold letters for detergents in solid form for household and laundry purposes. Filed Oct. 11, 1945 by Procter & Gamble Co., Cincinnati. Claims use since Oct. 9, 1945.

DUNVIL — This in upper case, bold letters for paste hand cleaner and soap products for the removal of grease and grime from hands, walls, porcelain, woodwork, and bathroom fixtures. Filed Nov. 1, 1945 by H. H. Dunning & Co., Denver. Claims use since Sept. 10, 1945.

PARAKEM — This in upper and lower case, extra bold letters for detergent for the chemical removal and solution of sludge in fuel oil tanks. Filed July 6, 1944 by Century Laboratories, Inc., Brooklyn. Claims use since June 9, 1941.

FP23—This in upper case, extra bold black letters and figures on a pennant background for termite repellent and mildew preventive. Filed Nov. 13, 1945 by Raymond G. Lamoureux,

Inglewood, Calif. Claims use since Oct. 17, 1945.

VIT—This in upper case, bold letters within a triangular design formed by the fanciful drawing of two rats with their noses close together, for exterminator of rats and mice. Filed Dec. 27, 1945 by Edward J. Lizotte, Liberty, N. Y. Claims use since July 12, 1921.

TEMP-ZONE—This in upper case, bold letters for insect spray. Filed Jan. 21, 1946 by Carnegie Chemical Manufacturing Co., Los Angeles. Claims use since Nov. 28, 1945.

TROPIC-ZONE — This in upper case, bold letters for insect spray. Filed Jan. 21, 1946 by Carnegie Chemical Manufacturing Co., Los Angeles, Calif. Claims use since Nov. 28, 1945.

CEDARDEET—This in upper and lower case, open letters for moth spray. Filed Feb. 25, 1946 by Carnegie Chemical Manufacturing Co., Los Angeles. Claims use since Jan. 2, 1946.

NOSECT — This in upper case, reverse letters on a rectangular design that crosses a spherical design for insect repellent and insecticide. Filed Mar. 9, 1946 by Chemical Specialties Co., New York.

GLO-CEN—This in upper and lower case, bold letters for surface polishing wax for surface treating battleship linoleum and other floor covering. Filed Nov. 3, 1945 by Central Chemical Co., Kansas City, Mo. Claims use since Apr. 16, 1945.

Trade Marks Granted

420,268. Toilet soap. Filed by Columbia Products Corp., Brooklyn, Aug. 18, 1945. Serial No. 487,2434. Published Jan. 15, 1946. Class 4.

420,270. Soapless detergents in powder, paste and liquid form. Filed by Michel Export Co., New York, Aug. 24, 1945. Serial No. 487,513. Published Jan. 1, 1946. Class 4.

420,277. Preparation for cleaning and polishing metals. Filed by Curoko Co., New York, Aug. 31, 1945. Serial No. 487,825. Published Jan. 8, 1946. Class 4.

420,278. Powder for cleaning milk cans, etc. Filed by Diversey Corp., Chicago, Aug. 31, 1945. Serial

No. 487,828. Published Jan. 8, 1945. Class 4.

420,290. All purpose soap. Filed by Essential Chemicals Co., Milwaukee, Sept. 10, 1945. Serial No. 488,-208. Published Jan. 15, 1946. Class 4.

420,473. Chemical Preparation for controlling mold organisms in lumber. Filed by Wyandotte Chemicals Corp., Wyandotte, Mich., Apr. 5, 1943. Serial No. 459,647. Published June 8, 1943. Class 6.

420,478. Chlorinated paraffin wax. Filed by Diamond Alkali Co., Pittsburgh, Pa., Sept. 13, 1944. Serial No. 474,155. Published Jan. 22, 1946. Class 6.

420,485. General deodorant. Filed by International Chemical Co., Chicago, Feb. 26, 1945. Serial No. 480,240. Published Jan. 22, 1946. Class 6.

420,575. Liquid soap. Filed by L. Sonneborn Sons, Inc., New York, Feb. 24, 1945. Serial No. 480,208. Published Jan. 29, 1946. Class 4.

420,585. Cleaning preparation in crystal form for rugs, upholstery, walls, furniture, etc. Filed by Danbett Products Co., Hawthorne, Calif., May 2, 1945. Serial No. 482,870. Published Jan. 29, 1946. Class 4.

420,612. Cleaning compound and household cleaner. Filed by Rabin Co., Los Angeles, Aug. 4, 1945. Serial No. 486,722. Published Jan. 29, 1946. Class 4.

420,635. Insecticides. Filed by Stratosol Corp., New York, Sept. 11, 1945. Serial No. 488,289. Published Feb. 5, 1946. Class 6.

420,643. Disinfectant, deodorant and germicide. Filed by Bacticide Co., South Boston, Sept. 22, 1945. Serial No. 488,855. Published Feb. 5, 1946. Class 6.

420,644. Insecticides. Filed by York Pharmacal Co., St. Louis, Sept. 22, 1945. Serial No. 488,879. Published Feb. 5, 1946. Class 6.

420,650. Insect spray. Filed by Ultra Chemical Works, Inc., Pawerson, N. J., Sept. 25, 1945. Serial No. 489,-979. Published Feb. 5, 1946. Class 6.

420,701. Shampoo. Filed by Main Street Trading Co., New York, Apr. 9, 1945. Serial No. 481,778. Published Feb. 12, 1946. Class 6.

**Camera Coverage of The Recent
Chicago Meeting of The Na-
tional Sanitary Supply Assn.**

Photos Courtesy L. J. Kelly



Tykor Products Expands

Tykor Products, Inc., New York, recently acquired the business of the Chemical Specialties Division of the Borden Company. This division of the Borden Company formerly handled insecticides, cleaning and sanitizing agents.

Mutual in New Quarters

Mutual Chemical and Supply Co., manufacturers of soap and sanitary chemicals, formerly of Galena, O., are now located in new quarters at 257-269 W. Gay St., Columbus, it was learned recently. The new quarters include a new factory and offices, construction of which was completed only recently. Mutual now has 60,000 square feet of factory and warehouse space, devoted exclusively to the manufacture of products for the sanitary maintenance field. John P. Moore is the owner of the company and R. L. Moore is plant manager. Both men were, for many years, prior to the establishment of their own company, affiliated with the sanitation and maintenance department of Cudahy Packing Co. The increased warehouse space will enable the company to expand its distribution, and toward that end it is offering to represent in the area other manufacturers.

Wil-Mer Chemical Co.

Wil-Mer Chemical Co. has recently started operations in Pittsburgh in quarters located at 25 Jonquil Ave. The new firm will do general exterminating work.

New Penick Executives

S. B. Penick & Co., New York, recently announced the election of Harold Noble as vice president, and of John Dabney Penick as a member of the board of directors. Mr. Noble has been associated with S. B. Penick & Co. for 29 years and has been manager of the insecticide division since it was established ten years ago. J. D. Penick,

a graduate of University of Virginia in 1928, was associated with the investment banking business until July 1942



HAROLD NOBLE

when he entered the Army as a private. After two years of overseas service, he retired last December with the rank of Major and joined the brokerage firm of A. M. Kidder & Co. as a partner.

Johnson Personnel

R. W. Carlson, manager of the sales division of S. C. Johnson & Son, Inc., Racine, Wis., was made a member of the wax manufacturing firm's management committee and is now in charge of all sales and merchandising activity. A. O. Fisher was moved from Cleveland to Racine to become field sales manager, his position as north central regional manager being filled by R. W. Griffith, Chicago, formerly Pittsburgh district manager. J. B. Carse was named product finishes manager. He joined the Johnson organization in January as industrial sales promotion manager and was formerly advertising and sales promotion manager for the Kawneer Co., Niles, Michigan. Walter L. Snead was named manager of the household products department. He was with General Mills, Inc. before spending 43 months of service in the Navy. Robert F. Vance moves up from advertising service manager to assistant advertising

manager. He was advertising manager for Wilson Sporting Goods Co., before coming to Johnson's in July 1945.

New Carnauba Substitute

Development of a wax that when made into a self-polishing floor wax gives much higher gloss and, preliminary tests indicates, much better wearing qualities than carnauba, was announced recently by Trio Chemical Works, Inc., Brooklyn. Synthetic waxes are appearing with all the characteristics of carnauba of the highest possible grade, the announcement states, and adds, "all of this seems to point to a distinct possibility of an eventual elimination of carnauba from waxes and polishes."

Sault Joins Hollingshead

R. M. Hollingshead Corp., Camden, N. J., manufacturers of automotive, household, and industrial chemicals, announced on June 29th the appointment of Charles A. Sault to the sales staff of their industrial division. After a period of study on research and manufacturing methods at the plant, Sault will be assigned to the Washington and Oregon headquarters in Seattle where he will be responsible for the distribution of "Whiz-Off," "Whiz" floor wax and other Hollingshead chemical maintenance items. Mr. Sault was formerly general manager for William D. Young and Associates of New York and Greenville, S. C.

Shohan Research Labs.

A new company, J. B. Shohan Laboratories, Newark, N. J., was recently established by Dr. Shohan, formerly with American Home Products Corporation. The new company will function as research and developmental laboratory for new products and processes in the biological and organic chemical field. Norman Applezweig, formerly research consultant with the products development division of American Home Products Corp., has been named director of research. The new company's address is 78 Wheeler Point Road, Newark 5, New Jersey.



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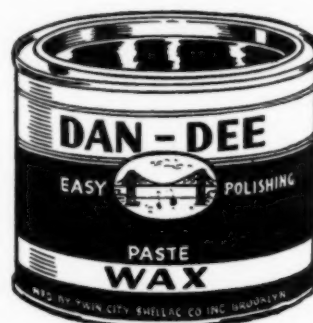
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Insecticide Bomb Contest

A contest, in which \$5,000 in cash prizes will be awarded, is being conducted currently by Bridgeport Brass Co., Bridgeport, Conn., on behalf of their "Aer-a-sol" insecticide bomb. The contest, which closed July 15, is based on the best conclusion, in 25 words or less, to the sentence beginning: "I like Bridgeport Brass Aer-a-sol Insecticide Bomb because..."

Pest Control Group Meets

The Eastern Pennsylvania Pest Control Association held its regular quarterly meeting at the Ben Franklin Hotel, Philadelphia, on June 11. There were 30 pest control operators present representing thirteen organizations. A motion picture was presented by Robert Thomas and William Dilks of the Lower Merion Township Board of Health, and was followed by a picture by Ernest Mills of the fish and wild life division, U. S. Department of the Interior on the use of DDT, ANTU, and 1080 as rodenticides. The next meeting will be held on September 10th, at Wilkes-Barre, Pa.

Owens-Illinois Appoints Two

Appointment of Roy B. Bradley, a registered pharmacist, and Don McAnally, former newspaperman, to the sales promotion department of Owens-Illinois Glass Co., Toledo, to service the drug and chemical industry was announced July 1. Mr. Bradley, a native of Boston, spent the past 17 years in the New England area working with the retail drug trade and as a manufacturers representative. Mr. McAnally had been in the newspaper business for 15 years. He joined Owens-Illinois in Nov., 1943, as an industrial editor, serving in Glassboro, N. J., and Toledo, O.

Can Co. St. Louis Plant

American Can Co. expects to start can manufacture at its St. Louis Amertorp plant by Sept. 1, the company announced last month. The huge war plant, formerly devoted to production of torpedoes, has now been converted to peacetime use.

New Sprayer Assn. to Meet

The first in what is expected to be a series of annual meetings of the newly formed National Sprayer and Duster Association will be held some-



JOHN F. BENHAM

time in September, according to John F. Benham, newly appointed secretary of the group. Neither the time nor the place have been announced as yet.

John F. Benham, the new secretary of the association is a native of Indiana and a graduate of Purdue University. His experience has been in the U. S. Department of Agriculture, College Extension and agricultural and development work. G. H. Collier of Dobbins Mfg. Co., Elkhart, Ind., is president of the association. The purpose of the organization is to cooperate with others interested in the proper application of sprays and dusts in homes, in industry and in food production.

Unexcelled Changes Name

Unexcelled Mfg. Co., New York, manufacturers of the insect repellent "448," have changed the name of the company to Unexcelled Chemical Corp. it was announced recently. At the same time, the company reported the election of C. Russell MacGregor, formerly vice-president, as president. He succeeds Thomas Jardine, who becomes vice-chairman of the board. The company, which was established in 1874 as Unexcelled Fireworks Co., manufactured fireworks principally until the second world war. Then it

gave over its entire facilities to the manufacture of war material. The change in name was effected to more accurately describe the manufacturing activities of the company which include paint and varnish, industrial finishes, cordage preservatives, etc., in addition to the insect repellent, "448," which was developed by the Naval Medical Research Institute at Bethesda, Md.

Germ-I-Tol Wins Award

Fine Organics, Inc., New York, manufacturers of pharmaceuticals and organic specialties, has just been awarded the Certificate of Meritorious Achievement for its contribution to the war effort. The award has been given for the quality and performance of "Germ-I-Tol," a quaternary ammonium compound, which Fine Organics Inc. developed and supplied to the Navy Department. Germ-I-Tol is a surface-active agent which was used for the sterilization of drinking and eating utensils, the prevention of molds on citrus fruits and leather, the elimination of odors in laboratory animal rooms. It is expected to have a variety of civilian applications.

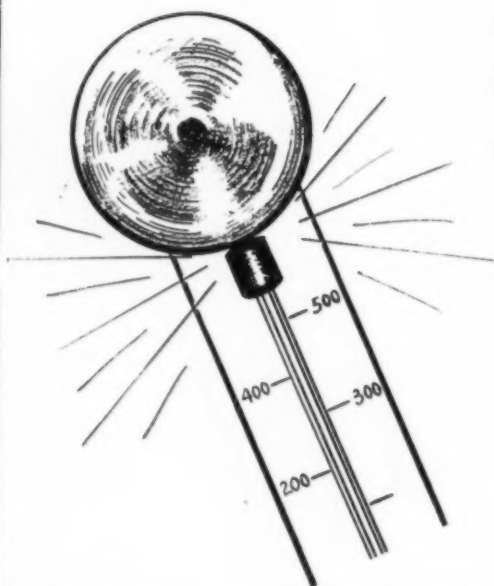
Dr. Alsterlund Dies

Dr. John F. Alsterlund, research entomologist with Rohm & Haas Co., Philadelphia, died on June 17th. Dr. Alsterlund graduated from the University of Illinois, taking his degree there some years ago. He was associated with the Tobacco By-Products and Chemical Corporation for some years before joining the Rohm & Haas research staff in 1944. He is survived by his wife.

Cole Has DDT Bombs

Cole Laboratories, Inc., Long Island City, N. Y., announced recently that they have added "Speed" DDT aerosol bombs to their line of liquid and powder DDT insecticides. Each bomb is said to contain one pint of pyrethrum concentrate, plus 3 per cent of DDT, in addition to other chemical ingredients and the propellant, "Freon-12."

Keep rings the bell—



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Keep Concentrate proved to be one of the interesting features at the recent Chicago Convention where many new products made their debut. It was shown how easily **Keep** did the job so completely and so safely. Visitors were impressed with the all-around efficiency of **Keep** as a detergent.

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PICAYUNE, MISSISSIPPI

C. L. Speiden Dies

Col. Clement L. Speiden, 52, former vice-president of Innis, Speiden & Co., New York, died in Charlottesville, Va., June 1. A veteran of both world wars, Col. Speiden joined the company following the first world war, working in the foreign department. Later he became secretary and then vice-president. Nine years ago he retired from active participation in the company but continued as a director.

New Rug Underlay

The United States Rubber Company of New York announces a new type underlay that will anchor scatter rugs and runners securely to high polished floors and lessen accidents around the home. The protective underlay is a sponge rubber cushion reinforced internally with a strong fabric. It is being made in 24 inch, 32 inch and 51 inch widths that can be cut to fit any size rug or runner. Color is green. The underlay can be cleaned with a damp cloth and will not mark or stick to the floor. It is also said to be durable, mothproof, odorless and sanitary. It is being sold through rug dealers, floor covering shops and carpet and rug departments of department stores.

Cadgene Rejoins Givaudan

George Cadgene, recently discharged from the Army, has returned to his job at Givaudan-Delawanna, Inc., New York, where he will assist

Dr. G. A. Geiger, purchasing agent. During most of his service in the Army, Mr. Cadgene was assigned to the atomic bomb plant at Oak Ridge, Tennessee.

N.S.S.A. Honors Kelly

At a meeting held immediately following the close of the National Sanitary Supply Association's convention in Chicago, recently, the board of directors of the group voted to give Leo J. Kelly, secretary, the title of executive vice-president, and adopted a resolution commending him upon the organization and manner in which the Association's largest convention was conducted.

CSA To Golf in Sept.

The Salesmen's Association of the American Chemical Industry will hold their final 1946 golf outing September 19th at Plandome Golf Club, Plandome, N. Y. The July tournament was to be held July 23d at Winged Foot Golf Club, Mamaroneck, N. Y. The August outing has been set for August 20 at Plainfield Country Club, Plainfield, N. J.

Pennsalt Issues DDT Leaflet

Pennsylvania Salt Manufacturing Co., Philadelphia, has issued a new six-page leaflet entitled "Confused About Insecticides?" Pennsalt DDT products are described and instructions offered for their use.

Bison Labs. Incorporates

Purchase of Bison Laboratories, a partnership, located at 80 Leslie St., Buffalo 11, N. Y., by Bison Laboratories, Inc., effective May 31, 1946, was announced July 1. The corporate business will continue at the same address as that of the former partnership. The former partners of Bison Laboratories have become stockholders in the new corporation. Officers are: president, Clair L. Monks; vice-president, Bernard G. King and secretary-treasurer, Lavern Karkau.

Cadie Polishing Cloths

Cadie Chemical Products, Inc., New York, exhibited their line of chemically treated polishing and pressing cloths at the National Premium-Buyers Exposition in Chicago last month, with A. J. Meyers in charge. Shortage of textile materials has delayed the company's post-war expansion plans, Morton Schaps, Chicago representative, said. One new item, a polishing cloth for windshield mirrors and window glass was, however, introduced at the show.

Rust Remover

Nox-Rust Chemical Corp., Chicago, is marketing a noncorrosive rust remover, under the name "Nox-Rust." It is said to dissolve rust scale rapidly, and to be relatively noncorrosive to steel even under conditions of long exposure. Ordinary rust removal is said to take only a matter of seconds, and to leave no perceptible etching or discoloration of surfaces. The product may be applied by brush, spray, or dip, although the action by dip on more or less inaccessible crevices makes this the most economical method.

C-Z Chemical Changes Name

C-Z Chemical Co., Beloit, Wis., manufacturers of household products, has changed its name to Allied Home-Products Corp., it was announced June 27 by N. C. Levine, president. A new C-Z Chemical Co. has been formed as a division to retain the name and to produce and market the various products bearing that designation.



The new, four-story, daylight plant of Puro Co., St. Louis, increases the company's floor space to 55,000 square feet. The building, company owned, is modern throughout. The company, which makes deodorant and household products was founded in 1929 by A. L. Saeks.

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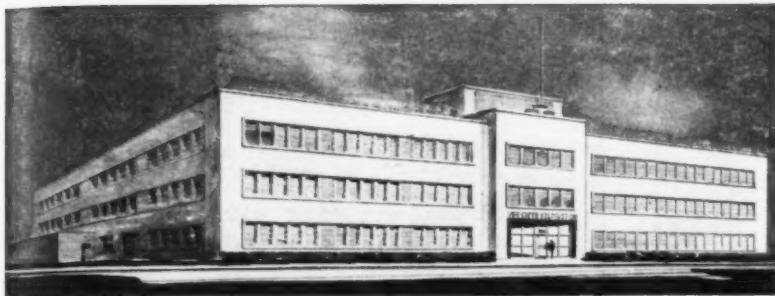
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New Velsicol Building

Velsicol Corp., Chicago, now has under construction a new office and laboratory building at 320-348 East Grand Avenue, Chicago. The company manufactures insecticides, resins, aromatic solvents, core oils, and other chemical products of petroleum derivation. The building, which will be completely air-conditioned, will provide the most modern facilities, including a pilot plant and instrumentation laboratories, for Velsicol's growing research and technical staffs.

New Aerosol Sprayer

A sprayer for dispensing a mechanically hand produced aerosol has recently been announced by Paul Engstrum, Washington, D. C. Made of plastic, it comprises a compression cylinder, closed at one end, and slightly larger than an inner cylinder which contains the insecticide. The sprayer is eight inches long by 1 1/4 inches in diameter, and operates with a maximum of 15 to 20 lbs. of pressure. It has a capacity of approximately three ounces, which is said to be sufficient for treating about 180,000 cubic feet of space. It is designed for use with a highly concentrated aerosol insecticide.

McCormick N. Y. Plant

McCormick & Co., Baltimore, manufacturers of insecticides and food products, will open a manufacturing plant in New York about August 1. The entire building at 481-487 Washington St., consisting of seven floors and totaling 50,000 square feet, has been leased to house the new plant and the company's New York offices. The regional sales office under the direction of R. L. Irwin has already been moved

This is part of an expansion program planned to promote new production goals and new product development. Features of the new building will be the specially equipped entomological and small animals laboratories where research on entomological and other biological problems will be conducted. Velsicol Corporation now employs over 50 chemists and assistants at its present location, 120 East Pearson Street, Chicago. The corporation's most recent development is the new insect toxicant "Velsicol 1068" ($C_{20}H_{10}Cl_8$).

to the new address. William E. Squires will act as general manager of the New York branch, when production begins, and will be assisted by Jack D. Englar. Principal activities at the new plant will be the bulk processing and packaging of spices.

New NAIDM Members

The following firms have recently been elected to active membership in the National Association of Insecticide & Disinfectant Manufacturers: Cooperative G. L. F. Soil Building Service, Ithaca, N. Y., Rigo Mfg. Co., Nashville, Tenn., and Westvaco Chlorine Products Corp., New York. New associate members include Cornelius Co., Minneapolis, and R. T. Vanderbilt, Co., New York.

Insecticide Sources

The Chemicals and Drugs Section, Office of Domestic Commerce, Washington, 25, D. C., has just prepared a data sheet listing reference sources on material dealing with the insecticide industry. Representative books, periodicals, yearbooks, etc., are listed in this bulletin (No. 54903).

New R & H Bactericide

A new odorless quaternary ammonium disinfectant called "Hyamine 1622" has recently been introduced by Rohm & Haas Co., Philadelphia. It is described as a white, fluffy, crystalline powder, readily soluble in water, stable, non-irritating and of low toxicity to warm-blooded animals. It does not injure fabrics, metals or painted surfaces. The new product is recommended particularly for use in the disinfection of inanimate objects, including barber and beauty shop equipment, milk cans and other dairy equipment, clothes, towels, linens, etc. A companion product, "Hyamine 10-X" is offered for use in pharmaceuticals such as mouth washes, gargles, shampoos, after shave lotions, antiseptics, etc.

Insect Repellent

Developed after a three-year study by the Naval Medical Research Institute, and tested and used in the tropics, Repellent 448 is now being commercially produced by Chandler Chemical Corp. of New York, under the trade name of "D-Ter." The colorless liquid applied as a spray, is said to be nearly odorless and to be harmless to fabrics, and nontoxic. It is used in diluted form to repel insects from screens and doors, and as a treatment to protect animals from attack. Repellent action is reported to last for 16 hours in temperate climates, and to continue for 10 hours under tropical conditions.

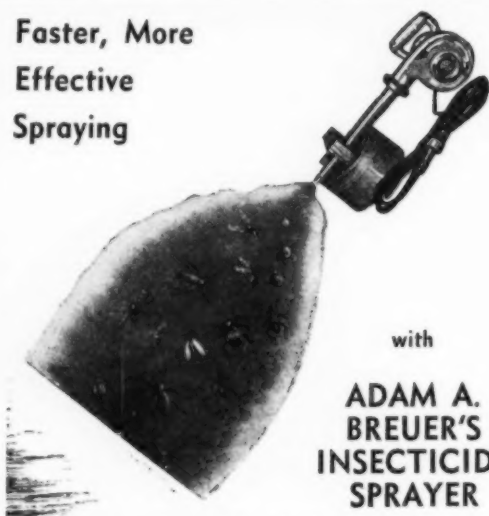
Boyle Building in Chicago

Boyle-Midway, Inc., maker of household insecticides, floor waxes, furniture polishes, etc., has announced plans for a building and expansion program for their Chicago operations. Additional floor space will be provided with improved machinery and other facilities. Ralph Simpson, plant manager, stated.

Lederer Joins Hollingshead

H. G. Lederer, Ph.D. has joined the research laboratories of R. M. Hollingshead Corp., Camden, N. J., in charge of insecticides and disinfectants.

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Exhibit at Tea Trade Show

BECAUSE of the clothing shortage and the need for careful conservation of wearing apparel, moth proofing chemicals are in great demand, R. F. Conover, president of W. B. Williams, Inc., Montclair, N. J., reported at the convention and trade show of the National Retail Tea & Coffee Merchants in Chicago last month. Sales of white canvas shoe dressing, however, are slow this summer, he said, because of shoe material shortages and OPA price restrictions on shoes.

The company's line of saddle soaps, marketed for years in large tin containers is now being packaged in collapsible tubes, an innovation which was introduced at army Post Exchanges, where the product was sold during the war.

The company has also found that by packaging stove and nickel polish in collapsible tubes there has been a decided upswing in the sales curve.

Korex Co., Ferndale, Mich., displayed a new wick-type deodorant, "Odor-Rid," along with its line of upholstery and rug cleaners.

Bailey, Prihoda & Co., Kalamazoo, Mich., also exhibited "D'Sapeer," a new wick-type deodorant, with either forest pine or burgundy scent in glass containers with matching color for beauty shop, home and office use.

"The Jinx," a 5 per cent DDT spray in 2-lb. cans for home use was shown by Claire Mfg. Co., Chicago, who also offered a new "Jinx" powdered rug cleaner, pine oil soap, moth crystals and other sanitation items.

Among other exhibitors of sanitary chemical products at the show were the following:

American Chemical Co., Birmingham, "Hot Foot" insecticides; American Povar Co., Brooklyn, furniture polish, window cleaner, and "liquid snow"; Brown Laboratories, Inc., Philadelphia, pine disinfectant; Cleanser Products, Inc., Chicago, soap-impregnated metal scouring pads; Club

Aluminum Products Co., Chicago, aluminum cleaners and polishes; Eagle Chemical Co., Milwaukee, Wis., ammonia compounds, pipe openers and other items; Walter R. Hansen, Elgin, Ill., coffee urn cleaners and cleaning preparations for other special purposes; Pioneer Mfg. Co., Cleveland, O., polishes, cleaners, waxes and other "Actrite" sanitary products; Procter & Gamble Distributing Co., Cincinnati, O., soap products; Solventol Chemical Products, Inc., Detroit, household cleaner; Studio Girl Shampoo, Los Angeles, shampoos. Allen B. Wrisley Co., Chicago, soaps and toiletries.

Tischler Biological Services

Dr. Nathaniel Tischler, who has been engaged in insecticide research and development work for fifteen years, has recently organized a business, Tischler Biological Services, to render technical service in the field of entomology, Tischler Research Services offers services in research and development, in consultation, and in biological and chemical testing of insecticides and insect repellents. This new organization also offers technical aid in legal matters of an entomological nature. It is located at 317 Leconey Avenue, Palmyra, New Jersey. For the past three years, Dr. Tischler served as entomologist in the Sanitary Corps of the U. S. Army. He was commissioned as Captain. He recently returned from the Southwest Pacific where he served in a malaria survey detachment in New Guinea, Netherlands East Indies, and the Philippines.

Deodorant on "Cow" Plane

The chlorophyll air freshener "Airkem" was used in a special dispenser aboard a Willis Airline plane that recently flew ten Guernsey heifers from Teterboro (N. J) Airport to Bogota, Columbia, S. A., W. H. Wheeler, Inc., the distributors of the product announced June 15. The object of the installation and the use of the air freshener was to keep the

plane odorfree and to make the trip pleasanter for the first air-borne herd, as well as for the plane's crew, according to the announcement. Upon arrival at Bogota, the cattle and their trappings were removed and the interior of the plane sprayed with "Airkem" to render it fit for human occupancy for the return trip.

Gum Association Elects

At its annual meeting held at the Plaza Hotel, New York, last month, the Water Soluble Gum Association of America, Inc. elected the following officers: president, E. A. Wieland, American Cyanamid & Chemical Corp.; vice-president, H. A. Wittridge, Jacques Wolfe & Co.; treasurer, P. A. Dunkel, Paul A. Dunkel & Co.; secretary, R. L. Zeno, S. B. Penick & Co. E. A. Smith, E. A. Wieland, C. F. Walden, Paul Dunkel, H. A. Wittridge, and R. L. Zeno became members of the board of directors.

New German Insecticide

Production of a new insecticide hexaethyl tetraphosphate, a light tan liquid, was recently announced by the Monsanto Chemical Company of St. Louis. The original development work was done in Germany and details of production and use were brought back to the United States by one of the groups investigating the German chemical industry. Hexaethyl tetraphosphate, a contact poison, appears to decompose to non-toxic products a few days after application and thus should be easily washed off foodstuffs before marketing. Being particularly effective as an aphid and mite killer, the product will supplement nicotine sulfate and complement DDT which is not as effective against plant lice and mites as it is against their enemies. The product will be formulated as a dust or spray for use in orchards, vegetable and flower gardens.

Johnson Music Group

The Johnson Wax Band and the Johnson Choral Group, composed of employes of S. C. Johnson & Son, Inc., Racine, Wis., recently celebrated their twentieth anniversary with a public concert at Memorial Hall.

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Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.



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Two financial wizards, quoted in the newspapers recently, see the beginning of the end of the present sellers' market. Be sure and tell your supplier this the very next time you are in the market for a car of glycerine! Then, duck!

* * *

By doctor's orders, Russ Young, Davies-Young tall and handsome prez, must consume four ounces of whiskey "or more" daily. We like that "or more" part. Those desiring the doctor's name and address in the hope that they too need treatment may apply to Mr. Young direct.

* * *

Best golf shot we have seen this year,—by Charley Furst of Furst-McNess of Freeport, Ill. in the NAIDM tournament at French Lick,—a niblick pitch from 100 yards out to one side across a deep trap to the very narrow raised eighteenth green,—ball hit about 10 feet from the cup and moved less than five feet although green was hard and skiddy.

* * *

Ever notice some of the photos of individuals appearing in the trade press? Many of them must have been taken a decade or two ago. Note with interest the shot of Charley Homan, a vice prez of Dodge & Olcott in a recent issue of D & C I. Who would ever think the subject in question were in reality a grandfather? Ah! Youth!

* * *

Supposedly, there are about 1200 plants of one sort or another making some soap in the U. S. A. Of this total, only something like 260 firms are listed as working on oil and fat quotas. From here on, gentle reader, the subtractions, deductions and conclusions are all yours!

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